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The Resources Agency

Department of Water Resources

BULLETIN No. 69–66

CALIFORNIA HIGH WATER
1965-1966

AUGUST 1967

RONALD REAGAN
Governor
State of California

WILLIAM R. GIANELLI
Director
Department of Water Resources

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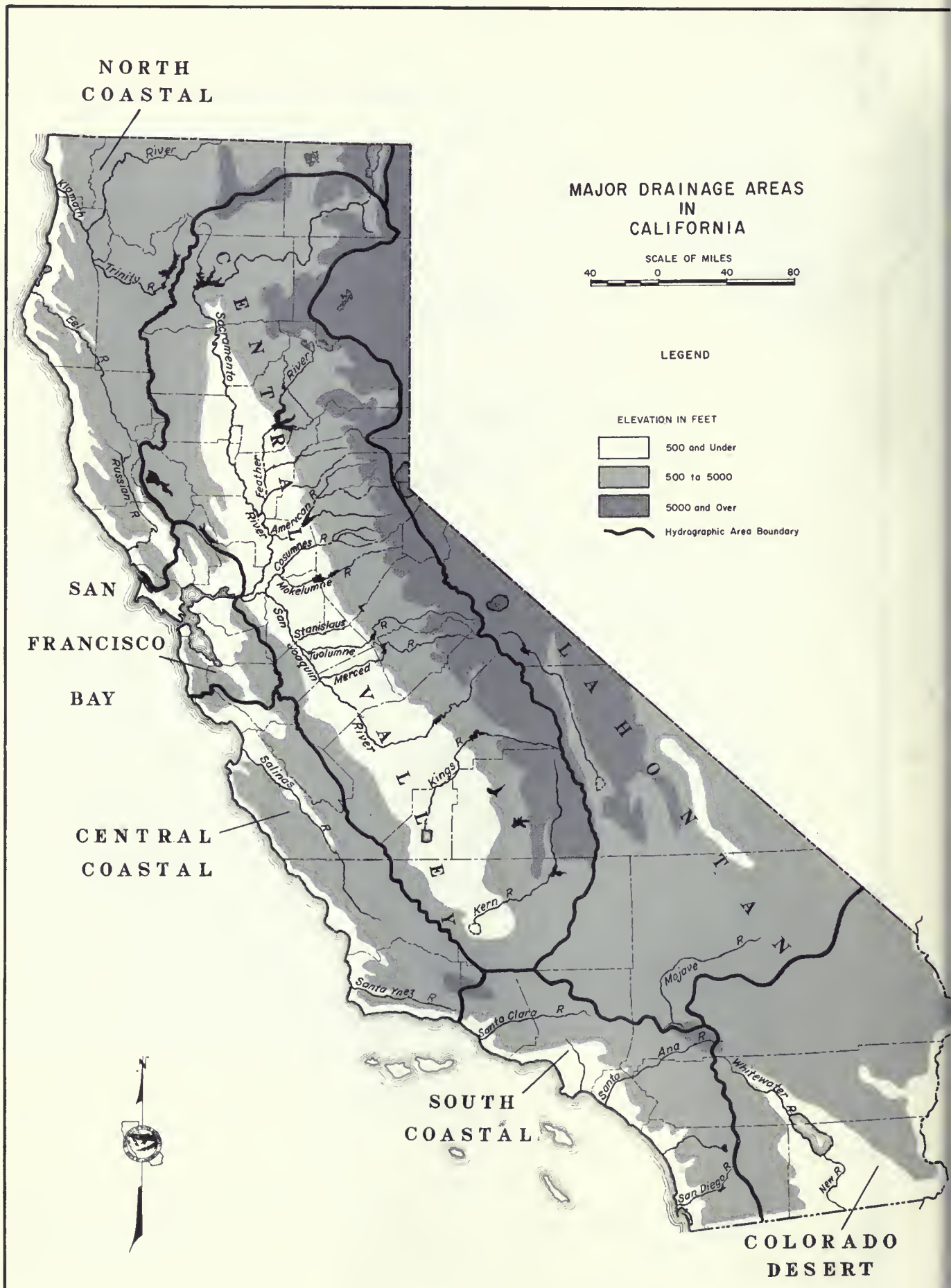
PLATE I


NORTH COASTAL
SAN FRANCISCO BAY
CENTRAL COASTAL
SOUTH COASTAL
COLORADO DESERT
MAJOR DRAINAGE AREAS IN CALIFORNIA
SCALE OF MILES
40 0 40 80
LEGEND
ELEVATION IN FEET
500 and Under
500 to 5000
5000 and Over
Hydrographic Area Boundary
Klamath River
Trinity R.
Eel R.
Russian R.
Sacramento River
Feather River
American R.
Cosumnes R.
Mokelumne R.
San Joaquin River
Stanislaus R.
Tuolumne R.
Merced R.
Kings R.
Salinas R.
Kern R.
Santa Ynez R.
Santa Clara R.
Mojave R.
Santa Ana R.
Whitewater R.
San Diego R.
New R.
CENTRAL VALLEY
LAHONTAN

FOREWORD

Bulletin No. 69-66, the fourth of an annual series, provides, in one report, information on the meteorology, rainfall-runoff, and damages resulting from the major storms of the 1965-66 water year. It describes the general weather patterns preceding and during storm periods, including precipitation characteristics and discusses the resulting runoff in the seven hydrograph areas of the State (Plate 1). It presents information on flooded areas and damages.

Data for this bulletin were supplied by the U. S. Weather Bureau, U. S. Geological Survey, U. S. Army Corps of Engineers, U. S. Bureau of Reclamation, and many other agencies, both private and public. Their cooperation is gratefully acknowledged.

William R. Gianelli

William R. Gianelli, Director
Department of Water Resources
The Resources Agency
State of California
June 28, 1967

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

RONALD REAGAN, Governor
WILLIAM R. GIANELLI, Director, Department of Water Resources
JOHN R. TEERINK, Deputy Director

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TABLE OF CONTENTS

TABLES

PLATES

ABSTRACT

Accelerated growth in the postwar period has resulted in extensive development of the flood plains of the State. Recurrent floods have subjected these developments to intensive damage. The recent and past flood experiences indicate additional flood protection must be provided as rapidly as possible. / The 1965-66 water year was notable for the record-breaking amounts and intensities of precipitation which occurred at many locations throughout Southern California during the November-December 1965 storms. Two storms during November recorded a total of 30 inches of precipitation and a one-day maximum of 12.4 inches at a station in the Santa Ana River Basin. / The response of streamflows to the heavy rains during November and December was immediate and intense. On most streams in the Southern California drainage basins, the maximum flows did not compare to the record flows of 1938. However, damages resulting from the high levels of runoff and resultant flooding were severe. Four counties in Southern California, San Diego, San Bernardino, Riverside, and Ventura, were proclaimed as disaster areas. There was widespread destruction of public and private property, transportation and communication facilities, and utilities. Fourteen deaths were attributed to the November-December storms and floods. / Flood damage estimates by the U. S. Army Corps of Engineers, County flood control districts, and county civil defense offices amounted to over $13 million. The damage figures, though great, would have been much larger had it not been for the operation of flood control facilities. / The North Coast area of California was hammered by a storm which struck on January 4. Rail and highway traffic was blocked in areas, leaving thousands of travelers stranded. / The streams rose rapidly, and the lowlands were flooded. Road closures followed the flooding and many communities, such as Shively, Holmes, Ferndale, Hoopa, and Orleans, were completely isolated. Thousands of persons evacuated their homes ahead of the rising Eel River, Redwood Creek, Russian, and Van Duzen Rivers. / Humboldt County received the greatest damage in the North Coastal area, and the Governor proclaimed the County a disaster area. / The January 1966 flood did not compare to the unprecedented Christmas week, 1964, flood; streamflows during January 1966 were well below the record levels. However, because flood control structures are virtually nonexistent in the North Coast area, there was again widespread damage and destruction. Information compiled by the Humboldt County Civil Defense Office and other county agencies, federal agencies, and the State Department of Water Resources indicate damages near $7 million occurred in Humboldt County.

PLATE 2

SOUTH COASTAL AREA
NOVEMBER 1965 STORM ISOHYETAL MAP

Southern California Storms of November and December 1965

Major November floods in Southern California resulted from unprecedented rainfall. A low pressure trough, firmly entrenched off the California coast, provided a southerly storm track across the State. This condition set the stage for two major storms: the first between the 13th and 19th and the second between the 21st and 26th.

The first storm (Plate 2) began with the movement of a cold front into the area. This front became quasi-stationary south of San Diego on the 15th and continued in this position for several days. Overrunning of the warm air mass over the sloping frontal surface sustained the uplift of moist air to produce heavy rainfall.

After a three-day lull, a wave formed on the frontal system and caused the second storm (Plate 3). While the rainfall during this second storm was not as heavy as that during the first, the fact that the second storm followed so closely contributed to increased runoff.

The low pressure trough remained off the west coast during December. On December 9, a wave on a cold front situated south of San Diego brought the first rain. The arrival of a second front on the 11th as well as the presence of the residual low pressure center maintained the rainy period through the 16th. Another brief rainy period occurred on the 21st and 22nd. A front moving into Southern California on the 28th brought the final storm of the month; rain fell heaviest on the 29th (Plate 4).

The December storm snow level was lower than that of the warmer November storm. At Palomar Observatory (elevation 5,545 feet) and Mt. Wilson (5,709 feet) snow fell between December 13th and 16th. Some snow also fell at Sanberg (4,517 feet) on the same days. The snow level lay at about 6,000 feet until the 12th but had lowered to 4,000 feet by the 16th.

Northern California Storm of January 1966

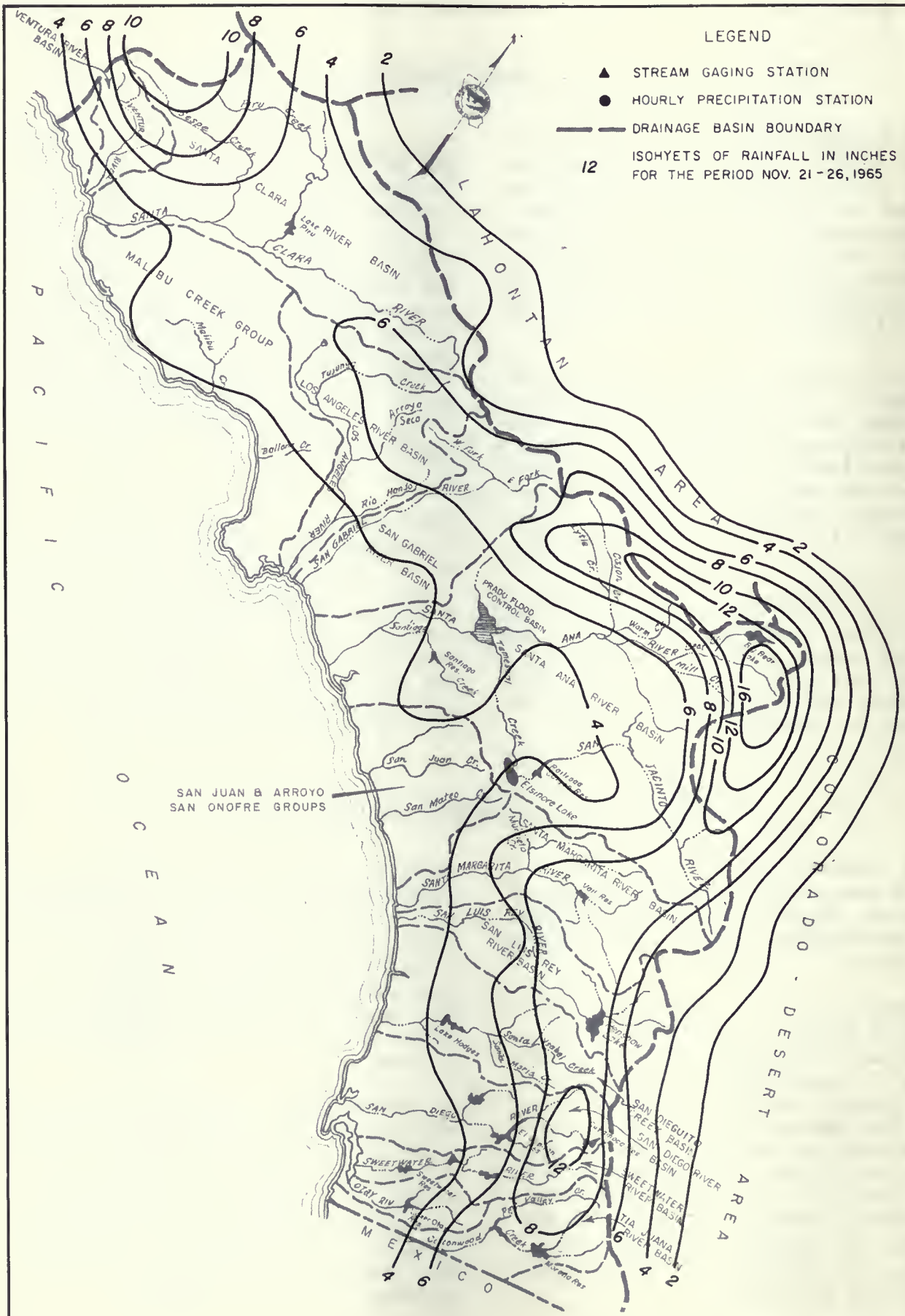
During January 1966, the displacement of westerlies southward caused a strong onshore flow of moist air over Washington, Oregon, and Northern California.

On January 2, a cold front moved into the North Coast. On the 3rd, a wave formed on the trailing end of the front west of Crescent City and that night moved inland. Another followed on the 5th. The passage of these weather systems across Northern California brought seven days of rain. The direction of upper level flow (removed from effects of terrain) between the 2nd and the 6th was from the southwest and moderately strong. The heaviest precipitation fell between the 3rd and the 5th.

Initially the air mass over the North Coast was rather cool; the snow lay at about 3,000 feet. Although the snow level lifted during the course of the storm (a fact reported by radio soundings taken twice daily at Medford, Oregon) many of the inland stations reported accumulations of snow in valleys and canyons.

Mt. Shasta City (elevation 3,587 feet) reported 26 inches of snow on January 2 and 3; 45 inches on January 4; and 51 inches on January 5. Thus, while warmer air flowed over the area aloft, a deep, low lying layer of cold air changed the raindrops to snow flakes and deposited heavy snow in the northern interior mountains.

PLATE 3



SOUTH COASTAL AREA
NOVEMBER 1965 STORM ISOHYETAL MAP

RAINFALL-RUNOFF

Throughout most of California the precipitation season extends from September through May; most flood-producing storms occur between November and April. During this period, moist air masses move inland across the State from the west and are lifted over the mountain ranges. Heavy precipitation frequently results. This precipitation usually occurs as rain in the valleys and lower mountains and as snow in the higher mountains. When the air is warm, rain falls even at very high elevations.

Floods in California originate from rains or snowmelt in the mountains. Snowmelt floods occur when extraordinarily warm spring temperatures melt a heavy snowpack; they occur mostly in the San Joaquin Valley. Rain floods occur south of the Tehachapi Mountains and along the Coastal Ranges where flows peak quickly in the steep basins. Floods of both types occur along the Cascade and Sierra Nevada Mountains; here both rainfall and snowfall are heavy.

Precipitation throughout California during the 1965-66 water year varied from below normal to extremely high, record-breaking peaks. In the mountains of Southern California, where the most intense rains fell, several stations reported over 30 inches of rainfall in November.

Runoff in Southern California during the November and December storms ranged from moderate to high. At many stations, streamflow was the greatest since 1943; at others, it broke record peaks.

In the North Coastal Hydrographic area, periodically subject to severe storms and heavy runoff, the January 1966 rainfall-runoff was relatively moderate. However, because of unprotected development in the flood plain and the lack of flood control works in the area, damaging floods occurred.

Although there was no flooding in the Sacramento Valley, the upper Sacramento River and tributaries rose sharply following heavy precipitation in the northern mountains during the first week of January 1966. At Tisdale, Colusa, and Moulton Weirs, the Sacramento River overflowed into Sutter Bypass.

South Coastal Hydrographic Area

With the exception of 0.01 inch recorded at Santa Maria and 0.12 inch at Santa Barbara, no rain fell in the South Coastal Hydrographic area during October, 1965.

The two major storms of November have been reported earlier. At Los Angeles, San Bernardino, and San Diego, November rains were heavier than ever before recorded -- and records go back more than 90 years. In Los Angeles, the earlier high was 6.53 inches; in 1965, it was 9.68 inches. In San Bernardino, the earlier high was 7.50 inches; in 1965, it was 8.11 inches. In San Diego, the earlier high was 4.93 inches; in 1965, it was 5.82 inches. And at Opids Camp, in the San Gabriel Mountains, 37.92 inches of rain fell between November 14 and 25. Burbank and San Diego experienced the wettest December since 1943. San Diego was deluged with intense rain; on December 10, the 1.36 inches that fell during a single hour set a new record. On December 29, Mt. Baldy Notch precipitation station reported 15.15 inches, the highest one-day rainfall recorded at any Southern California station. On the same day, Burbank station reported 5.30 inches of rain, the highest one-day December rainfall at that station.

Table 3 provides November and December rainfall data from selected precipitation stations and Plate 4 locates both precipitation and stream gaging stations in Southern California.

PLATE 4

Hourly Precipitation Stations

1. Sanberg
2. Wheeler Springs 2 SSW
3. Lechuza Point Station FC
4. San Fernando PH 3
5. Tujunga Mill Creek FC
6. Los Angeles WB AP
7. Mt. Wilson FC
8. Opids Camp
9. San Gabriel Dam
10. San Dimas Tanbark Flat
11. Spadra Pacific FC
12. Santiago Dam
13. Silverado Ranger Station
14. Laguna Beach 2
15. Riverside Exp. Station
16. Santa Ana River PH 3
17. Beaumont
18. San Jacinto Ranger Station
19. Winchester
20. Idyllwild Ranger Station
21. Fallbrook
22. Palomar Mt. Observatory
23. Lake Wohlford
24. Warner Springs
25. Julian Wynola
26. San Diego WB AP
27. Lower Otay Reservoir
28. Morena Dam

Stream Gaging Stations

1. Seepe Creek near Wheeler Springs
2. Ventura River near Venture
3. Seepe Creek near Fillmore
4. Hopper Creek near Piru
5. Piru Creek above Lake Piru
6. Tujunga Creek near Sunland
7. Tujunga Creek below Mill Creek
8. Los Angeles River at Los Angeles
9. San Gabriel River at Pico
10. Cajon Creek near Keenbrook
11. Lytle Creek near Fontana
12. Santa Ana River below Prado Dam
13. Santiago Creek at Santa Ana
14. Warm Creek near San Bernardino
15. Santa Ana River, E St. Br.
16. San Jacinto River near Elsinore
17. San Juan Creek near San Juan Capistrano
18. San Mateo Creek near San Clemente
19. San Jacinto River near San Jacinto
20. Temecula Creek at Vail Dam
21. Santa Margarita River at Yeidora
22. San Luis Rey River at Lake Senehaw
23. San Dieguito River at Lake Hodges
24. Santa Maria Creek near Ramona
25. Santa Ysabel Creek at Sutherland Dam
26. Boulder Creek at Cuyamaca Reservoir
27. San Diego River at El Capitan Dam
28. San Diego River near Santee
29. Sweetwater River at Sweetwater Dam
30. Sweetwater River near Descano

SOUTH COASTAL AREA
PRECIPITATION AND STREAM GAGING STATION LOCATION
AND
DECEMBER 1965 STORM ISOHYETAL MAP

Table 1: Precipitation Comparison for Six Storms: North Coastal and Sacramento Valley Basins**

Station	One Day						Two Days						Three Days						Four Days					
	Dec. 1955	Feb. 1960	Oct. 1962	Jan-Feb 1963	Dec. 1964	Jan. 1966	Dec. 1955	Feb. 1960	Oct. 1962	Jan-Feb 1963	Dec. 1964	Jan. 1966	Dec. 1955	Feb. 1960	Oct. 1962	Jan-Feb 1963	Dec. 1964	Jan. 1966	Dec. 1955	Feb. 1960	Oct. 1962	Jan-Feb 1963	Dec. 1964	Jan. 1966
North Coast																								
Alderpoint	5.06	3.66	3.85	3.70	5.85	4.95	6.96	6.46	6.30	6.40	10.35	8.11	7.76	6.85	6.45	7.68	13.60	10.11	9.51	9.65	10.95	6.16	14.70	11.37
Cummings	7.00	6.00	4.03	5.08	11.80	6.24	11.00	10.42	7.64	7.65	18.04	8.98	12.20	12.84	11.01	9.83	22.70	11.40	15.90	14.00	13.88	10.59	25.44	12.80
Gasquet RS	7.89	3.65	3.88	2.47	6.35	6.72	10.19	6.52	6.32	4.43	10.39	11.87	11.39	9.01	8.20	5.10	13.90	13.27	14.02	10.16	9.29	7.06	17.16	20.76
Mad River RS	4.04	3.80	3.94	4.63	7.87	4.82	7.55	7.25	6.67	6.93	14.77	6.30	9.77	10.25	8.25	--	--	10.47	12.44	11.45	10.96	--	(5 days) 21.07	11.75
Orleans	3.50	2.70	3.25	1.92	7.38	3.60	6.55	5.38	4.89	3.52	11.07	6.35	7.54	7.90	6.15	5.09	13.63	7.97	9.46	8.52	7.83	5.50	14.50	6.96
Scotia	3.39	2.05	1.93	1.86	5.13	3.89	7.19	4.09	3.76	2.99	7.35	5.11	8.62	5.47	5.01	4.46	9.10	6.54	11.53	6.25	6.49	4.99	9.68	7.06
Russian River Basin																								
Cloverdale 3 SSE	6.25	3.30	8.37	3.30	3.97	4.69	9.08	4.30	11.30	6.33	7.82	6.54	9.73	4.80	11.77	9.07	10.19	7.01	14.80	5.21	11.82	9.26	11.27	7.22
Guerneville	7.68	8.40	5.30	3.05	3.70	5.70	9.81	9.44	7.38	5.89	6.45	7.52	10.18	10.16	8.40	8.71	7.57	9.04	14.84	10.68	8.82	8.81	8.66	9.40
Healdsburg	3.73	2.86	4.89	5.08	4.28	4.98	6.65	4.71	6.34	9.97	6.35	6.83	7.66	5.17	9.64	10.75	9.30	7.36	9.98	5.72	10.52	11.19	10.24	7.79
Saint Helena	5.76	4.30	5.58	4.63	4.02	3.79	7.99	6.00	9.08	6.16	7.60	6.85	9.08	7.19	10.64	9.45	9.14	6.96	12.58	7.46	11.89	9.87	9.49	6.97
Sacramento Valley																								
Red Bluff WB AP	.96	1.28	1.90	1.23	1.08	1.77	1.79	1.47	3.16	2.41	1.89	2.59	2.45	1.59	3.42	3.46	1.95	2.65	2.73	1.81	3.51	3.49	2.41	--
Shasta Dam	8.24	3.18	3.54	2.64	11.64	4.16	12.28	4.26	6.22	5.01	15.22	6.80	16.23	5.04	7.59	6.27	18.80	7.63	22.15	5.66	10.27	6.56	21.38	8.63
Paskenta RS	2.42	1.37	2.15	2.65	3.04	1.95	3.48	1.83	3.38	3.80	4.41	2.70	4.43	2.25	3.64	3.65	4.85	2.90	3.93	2.31	4.06	3.65	5.10	2.92
Sacramento WB	2.41	0.86	3.63	1.70	1.79	0.94	3.81	1.25	5.80	3.09	2.92	1.18	4.11	1.45	6.69	3.60	3.38	1.33	5.16	1.45	6.85	3.65	3.72	1.33
Marysville	2.27	0.69	4.24	2.03	0.74	1.39	4.10	0.90	7.29	3.38	1.10	1.68	4.31	0.95	9.26	3.38	1.37	1.83	5.45	1.50	9.31	3.69	1.63	1.90
Brush Creek	6.68	8.55	11.40	4.99	9.41	5.70	11.93	10.29	18.75	9.78	14.56	7.45	13.64	11.03	23.70	12.55	18.76	9.04	18.08	11.88	25.99	12.95	20.76	9.98
Blue Canyon WB AP	7.44	5.50	7.37	8.70	9.33	2.08	13.36	10.41	13.81	13.96	15.24	4.06	18.55	12.06	19.55	16.01	19.79	4.07	20.66	12.55	28.02	17.58	22.93	4.07

Table 2: Precipitation Comparison for Six Storms: San Joaquin, Central Coast and Southern California Basins ***

Station	One Day						Two Days						Three Days						Four Days					
	Mar. 1938	Nov. 1946	Jan. 1952	Feb. 1958	Nov. 1965	Dec. 1965	Mar. 1938	Nov. 1946	Jan. 1952	Feb. 1958	Nov. 1965	Dec. 1965	Mar. 1938	Nov. 1946	Jan. 1952	Feb. 1958	Nov. 1965	Dec. 1965	Mar. 1938	Nov. 1946	Jan. 1952	Feb. 1958	Nov. 1965	Dec.* 1965
San Joaquin Basin																								
Fresno WB	2.05	.64	1.74	1.11	.57	.55	2.84	.83	1.81	1.54	.86	.79	3.03	.85	1.81	1.54	1.32	1.02	3.05	1.33	1.81	1.54	1.58	1.06
Yosemite NP	1.23	2.58	1.90	2.45	2.52	2.63	4.54	3.13	3.68	3.25	3.74	4.09	5.74	5.13	3.63	3.55	4.48	5.13	5.95	5.13	3.66	5.67	5.72	5.13
Springville	2.95	4.13	1.27	1.82	.77	2.40	4.96	4.71	2.39	3.25	1.54	3.17	6.39	4.71	2.49	3.26	2.01	4.14	7.56	7.25	2.91	3.26	2.47	4.71
Central Coast																								
Los Gatos	1.89	3.18	4.82	2.91	1.02	1.22	3.11	3.52	6.66	4.24	1.93	2.33	3.27	3.52	7.23	4.65	2.47	2.98	3.32	4.40	9.19	5.30	3.04	3.50
Salinas CAA	.65	0	1.30	1.00	1.23	.79	1.30	0	1.50	1.06	1.41	1.52	1.52	0	1.79	1.18	1.41	2.22	1.65	0	2.20	1.19	2.34	2.85
Paso Robles FAA	1.95	2.45	1.02	1.04	1.85	.90	2.48	2.51	1.30	1.99	2.42	1.44	3.15	2.51	1.53	1.99	2.89	1.62	3.26	2.96	2.04	1.99	3.30	2.00
Southeast Desert																								
Beaumont 1E	6.25	1.86	1.62	2.37	2.85	1.00	7.15	2.90	2.45	3.47	4.72	1.67	8.90	3.17	3.75	3.70	4.95	1.67	9.30	3.43	3.86	3.70	5.51	1.90
Fairmont	4.00	1.56	4.74	1.54	3.75	4.31	5.15	3.11	5.50	2.70	5.75	5.73	5.64	4.06	5.62	3.98	6.30	5.77	5.64	4.35	8.18	3.98	7.15	5.88
Palmdale AP	2.39	1.14	2.44	.82	2.58	1.04	3.15	2.16	2.44	1.03	2.57	1.04	4.09	2.28	4.36	1.10	2.82	1.06	4.16	2.38	4.36	1.10	2.89	1.06
South Coastal Basins																								
Santa Maria WB	1.93	1.08	1.20	1.21	1.68	.80	2.25	1.30	2.21	1.53	2.18	1.47	2.51	1.41	2.23	1.53	2.24	1.69	2.53	1.54	3.07	1.53	2.52	1.63
Cuyamaca	7.65	2.95	2.72	2.48	9.60	3.36	10.14	3.72	5.09	4.03	10.69	3.55	11.08	4.05	5.66	4.41	10.99	3.59	13.54	4.45	5.77	4.41	11.90	4.27
Riverside Fire Station #3	--	1.29	1.68	1.31	1.46	1.01	--	1.79	2.06	1.71	2.76	1.49	--	1.94	2.94	1.91	2.96	1.45	--	1.94	3.06	1.91	3.40	1.55
La Mesa	2.00	1.21	1.60	2.04	2.09	2.11	2.76	1.66	2.67	2.48	3.28	2.26	4.06	1.82	2.87	2.51	3.28	2.26	4.34	1.85	2.88	2.51	3.65	2.31
Los Angeles AP	5.86	2.67	1.61	3.49	2.12	1.96	6.36	3.85	2.56	3.49	2.81	2.00	6.74	4.96	3.69	3.49	3.18	2.11	6.74	5.53	4.89	3.49	3.55	2.15
Santa Barbara	3.59	2.15	2.29	3.10	3.49	2.06	5.82	2.33	6.74	3.80	4.05	2.40	6.38	2.33	6.94	4.25	4.76	2.84	6.38	3.08	8.79	4.41	5.08	2.91
Oxnard	3.30	4.30	3.22	2.96	2.51	1.25	4.96	5.58	4.16	3.04	3.39	2.11	4.96	6.18	6.30	3.04	4.76	2.22	4.96	6.25	7.24	3.04	5.22	2.22
San Diego WB	1.56	.88	1.29	1.37	1.53	2.15	2.27	1.15	1.76	1.94	2.32	3.45	2.80	1.20	2.29	2.00	2.72	3.46	2.89	1.24	2.29	2.00	2.86	3.67

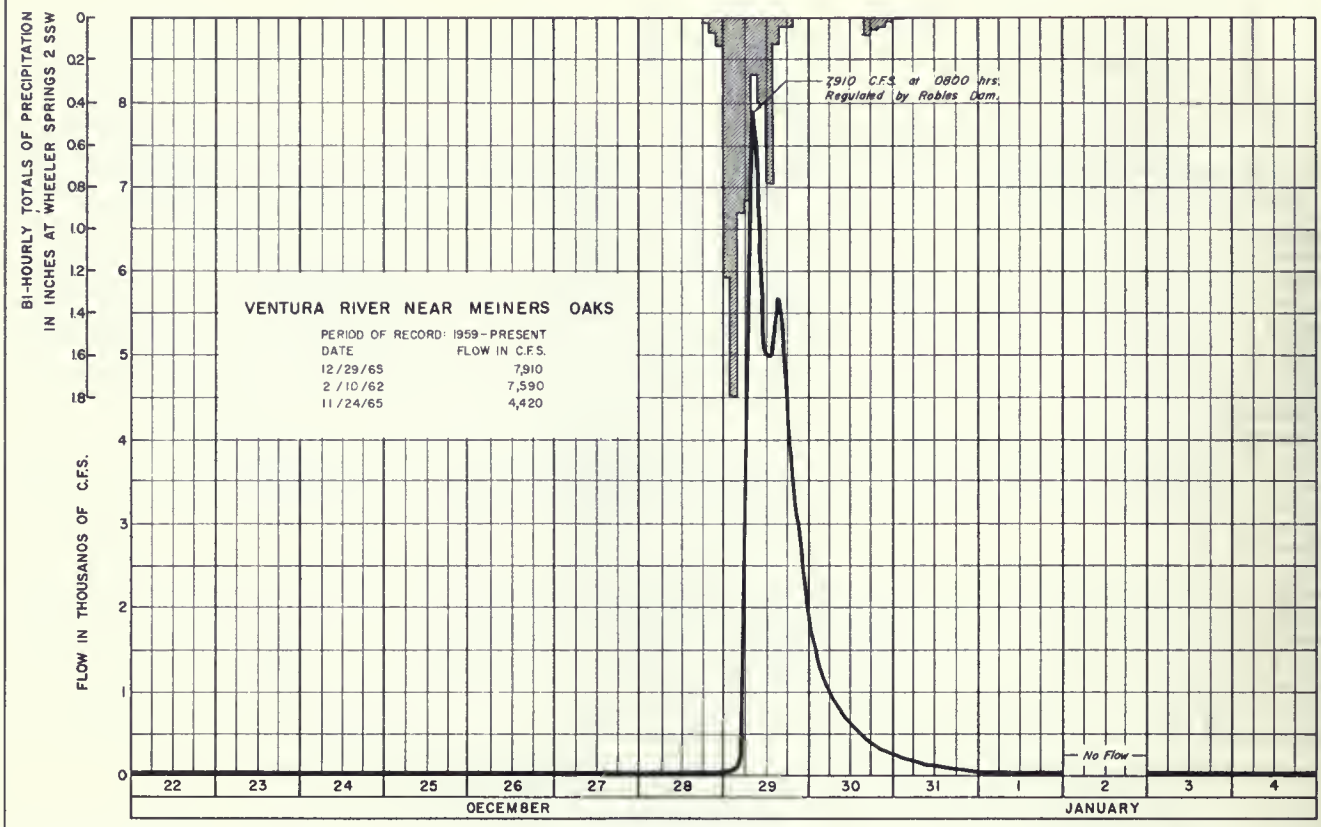
* This value includes rain on January 1, 1966, at some precipitation stations.

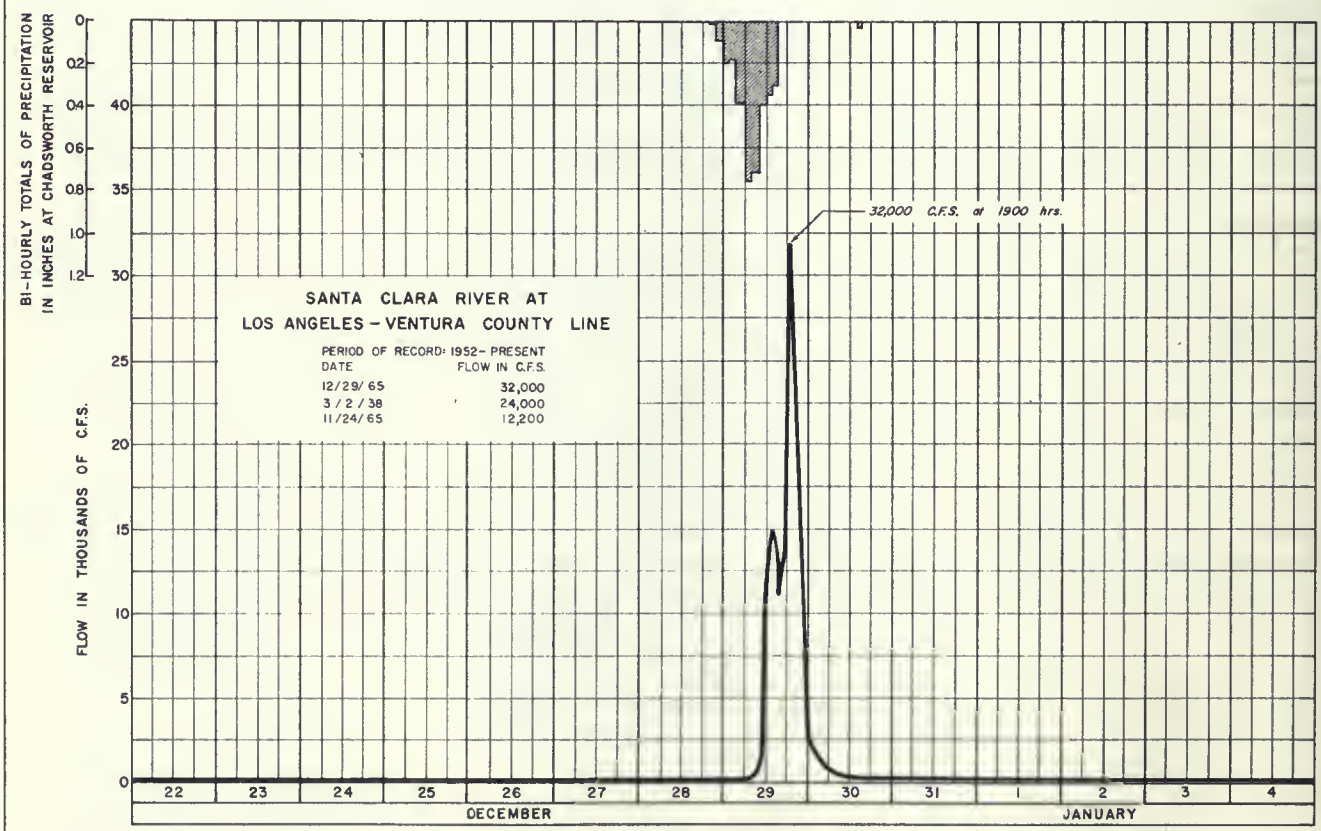
** Dates of Storm Periods Used: Dec. 15-31, 1955
Feb. 6-10, 1960
Oct. 9-14, 1962
Jan. 29-Feb. 2, 1963
Dec. 18-31, 1964
Jan. 1-6, 1965

*** Dates of Storm Periods Used: Mar. 1-15, 1938
Nov. 8-24, 1946
Jan. 12-19, 1952
Feb. 2-5, 19-21, 1958
Nov. 14-26, 1965
Dec. 28-31, 1965

The underlined value is the maximum value for the six storms listed.

PLATE 5





HYDROGRAPHS OF VENTURA AND SANTA CLARA RIVERS

Table 3: November and December Rainfall at Selected Southern California Precipitation Stations

Precipitation Station and Basin	Rainfall Period (inclusive) Nov. 13-19 (Inches)	Nov. 21-26 (Inches)	Total Rainfall November (Inches)	Rainfall Period (inclusive) Dec. 9-16 (Inches)	Dec. 28-31 (Inches)	Total Rainfall December (Inches)
Santa Ana River Basin						
Santiago Dam	3.82	4.62	8.44	2.30	2.04	4.35
San Jacinto	2.71	3.86	6.47	2.07	0.84	3.24
Santa Clara River Basin						
Santa Paula	6.06	4.31	10.37	0.40	5.28	5.68
Piedra Blanca Grd. Sta.	10.79	9.79	20.58	0.42	8.00	8.42
Ventura River Basin						
Wheeler Springs 2SSW	10.61	8.47	19.08	0.32	6.89	7.21
Ojai	8.33	5.45	13.78	0.52	5.43	5.95
Los Angeles River Basin						
Burbank WB Airport	5.92	4.71	10.63	1.40	5.44	6.84
San Gabriel Fire Dept.	11.21	11.13	22.34	2.01	4.29	6.33
San Gabriel River Basin						
San Dimas Tanbark	7.97	10.90	18.87	1.98	6.20	8.29
Santa Fe Dam	5.64	4.17	10.81	2.04	3.13	5.23
Santa Margarita River Basin						
Fallbrook	3.30	5.40	8.80	3.70	1.40	5.50
Anza	3.28	5.46	8.74	1.81	0.80	3.13
San Diego River Basin						
Cuyamaca	2.76	12.73	15.49	5.50	3.59	10.29
El Capitan Dam	6.30	4.74	7.04	2.51	1.15	4.26
Sweetwater, Otay, and Tia Juana River Basins						
Barrett Dam	2.07	6.72	8.79	4.06	0.42	5.04
Lower Otay Reservoir	2.92	3.59	6.51	2.41	0.59	3.55

Santa Clara River Basin

The streams of the Santa Clara River basin drain about 1,600 square miles in the Pacific slopes north and west of the Los Angeles River. Although rains of the first November storm (13-19) saturated the area, runoff was light. It greatly intensified when rains of the second November storm (21-26) hit the already saturated area. Then, and again in late December, substantial peak flows occurred, those of December generally exceeding those of November.

In the Santa Clara River at Los Angeles-Ventura County line, (Plate 5) flow peaked at 12,200 cfs (cubic feet per second) on November 24; and 32,000 cfs on December 29. The latter flow is the highest recorded in the river -- 33 percent greater than that of the previous high in March 1938.

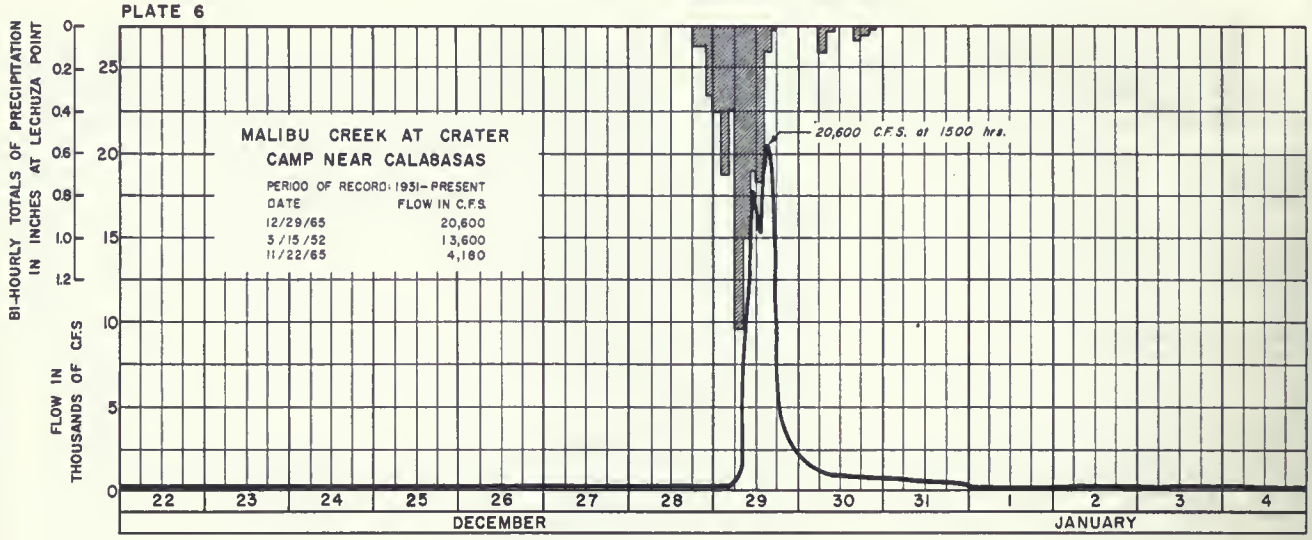
On November 24, in Sespe Creek near Fillmore, flow peaked at 19,600 cfs; and on December 29, at 21,500 cfs. These peaks were about 35 percent and 40 percent, respectively, of previous highs set in March 1938.

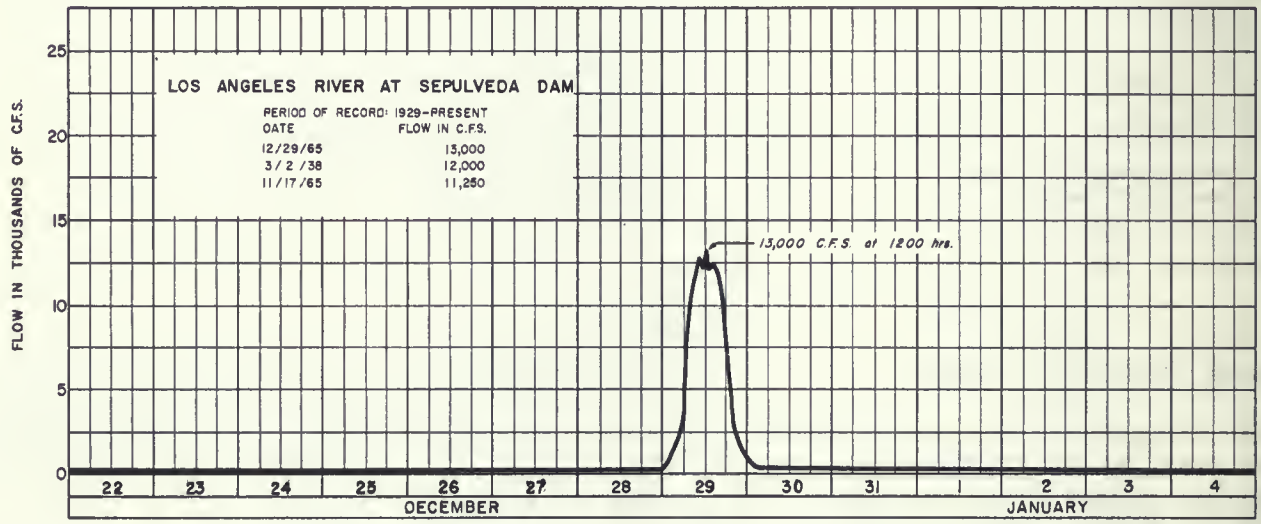
Lake Piru partially regulated peak flows on Piru Creek. Storage increased from 5,890 acre-feet on November 12, 1965, to 53,600 acre-feet on January 25, 1966. The lake has a total storage capacity of 101,000 acre-feet.

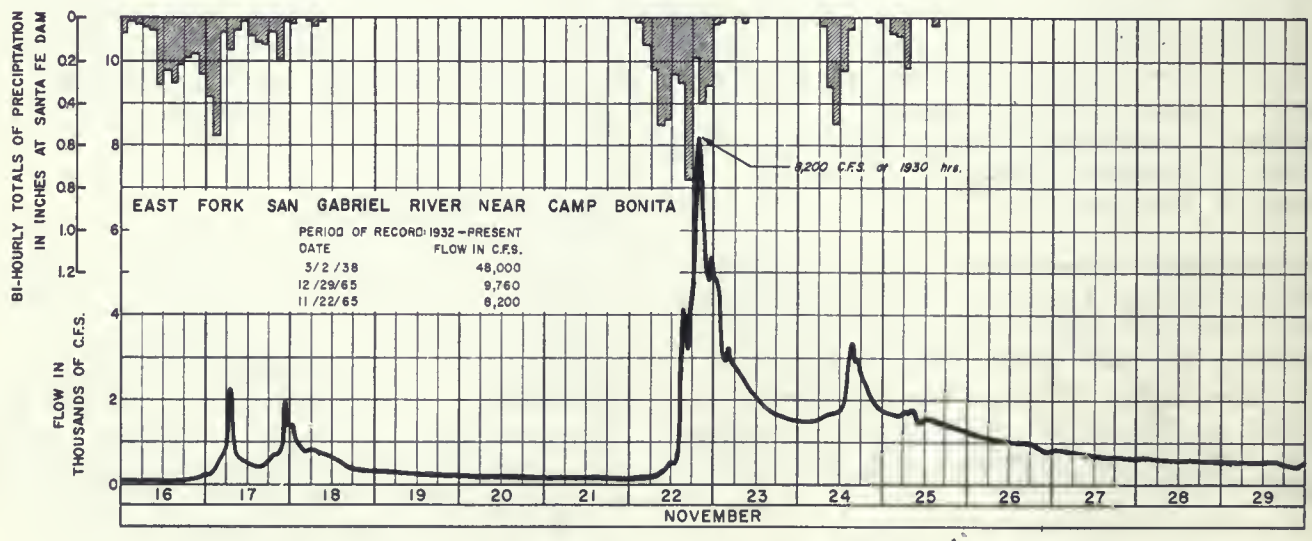
Ventura River Basin

Ventura River drains a relatively small basin of about 226 square miles. High flows in the basin are regulated by Casitas Reservoir on Coyote Creek. On December 1, this reservoir contained an all-time high of 58,159 acre-feet. Above the reservoir near Matilija Hot Springs, Matilija Creek flows peaked at 5,400 cfs on November 16 and at 5,540 cfs on December 29. These are lower than the

PLATE 6







HYDROGRAPHS OF MALIBU CREEK, LOS ANGELES AND SAN GABRIEL RIVERS

record 8,800 cfs flow of January 15, 1952. At the Ventura River near Ventura gage, flow peaked at 11,200 cfs on November 24, and at 10,700 cfs on December 29; the March 1938 peak was 39,200 cfs. Plate 5 presents a hydrograph of flow at the Ventura River near Meiners Oaks gage.

Malibu Creek Group

Malibu, Topanga, Ballona, Calleguas and Conejo Creeks drain an area of approximately 980 square miles. Although, on November 22, the flow in Malibu Creek at Crater Camp near Calabasas (Plate 6) peaked at only 4,180 cfs, its December 29 peak of 20,600 cfs broke an earlier record of 13,600 cfs, set on March 15, 1952.

At Ballona Creek near Culver City, the November 22 peak of 17,000 cfs approached the 19,000 cfs record peak of March 2,1938.

In the Topanga Creek Basin, December rains fell more heavily than those of November: the December 29 peak discharge was 6,000 cfs: that of November 22 was 1,750 cfs.

Los Angeles River Basin

The Los Angeles River Basin drains an area of approximately 822 square miles. Mountains and foothills cover half the area; valley and mesa, the other half.

Although the two November storms produced unusually high accumulated rainfall, the intensity of rainfall generally was moderate. Rain began about noon on November 14, continued steadily and moderately until midnight November 17, began again on November 21, and continued sporadically until the morning of November 25.

During December, rains fell lightly through December 9-17, and December 22-23, and intensified December 29 to January 1. Although rainfall totals were higher during November, some streams had higher peak flows in December because of reservoir releases.

At Sepulveda Dam, Los Angeles River discharges peaked at 11,200 cfs on November 17, and at 13,000 cfs on December 29 (Plate 6). The December peak exceeds the previous record (March 1938) by 800 cfs. At the Arroyo Seco near Pasadena, gage flow peaked at 3,160 cfs on November 22, and at 3,050 cfs on December 29. These flows were the highest and third highest, respectively, since March, 1938.

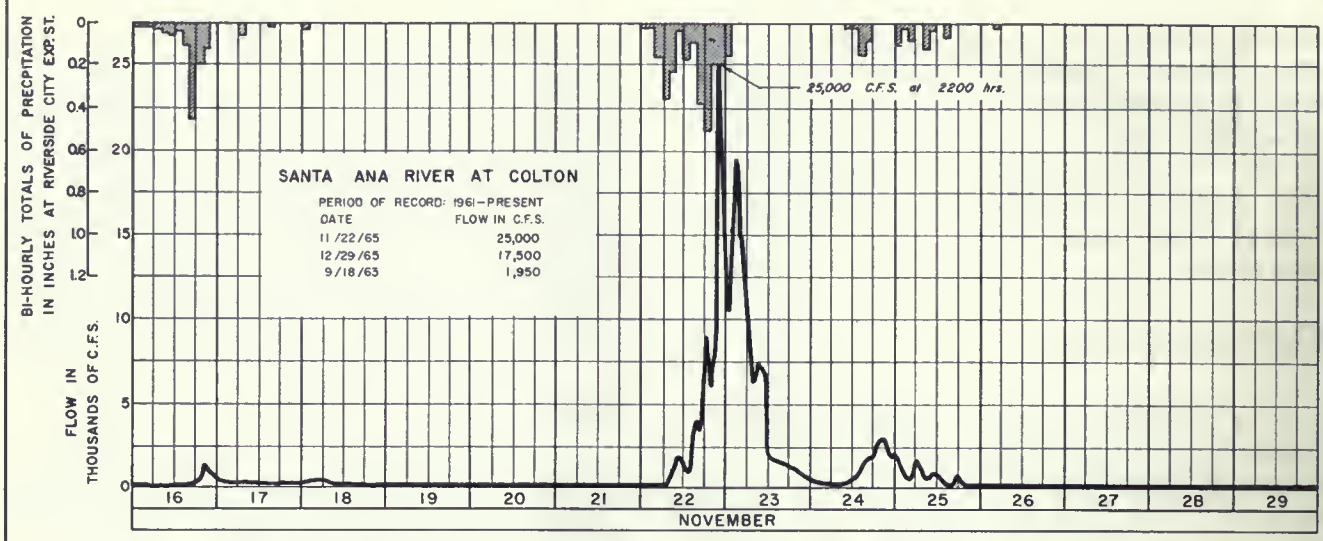
San Gabriel River Basin

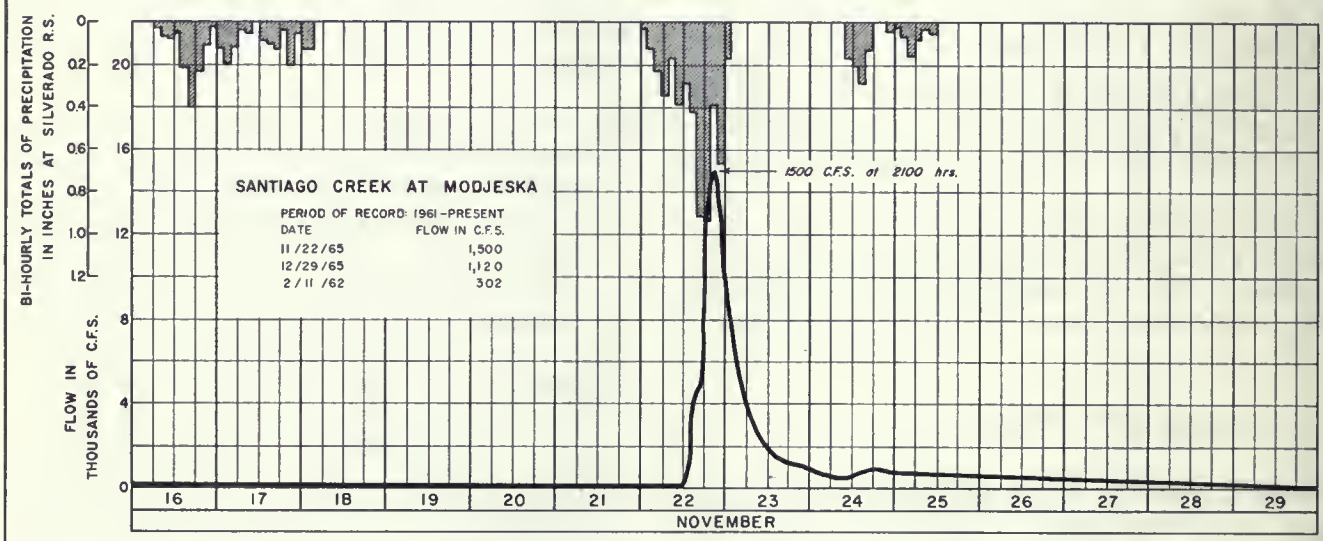
The San Gabriel River drains approximately 580 square miles between the Los Angeles River on the north and the Santa Ana River on the south. About 375 square miles of this basin are on the westerly slopes of the San Gabriel Mountains.

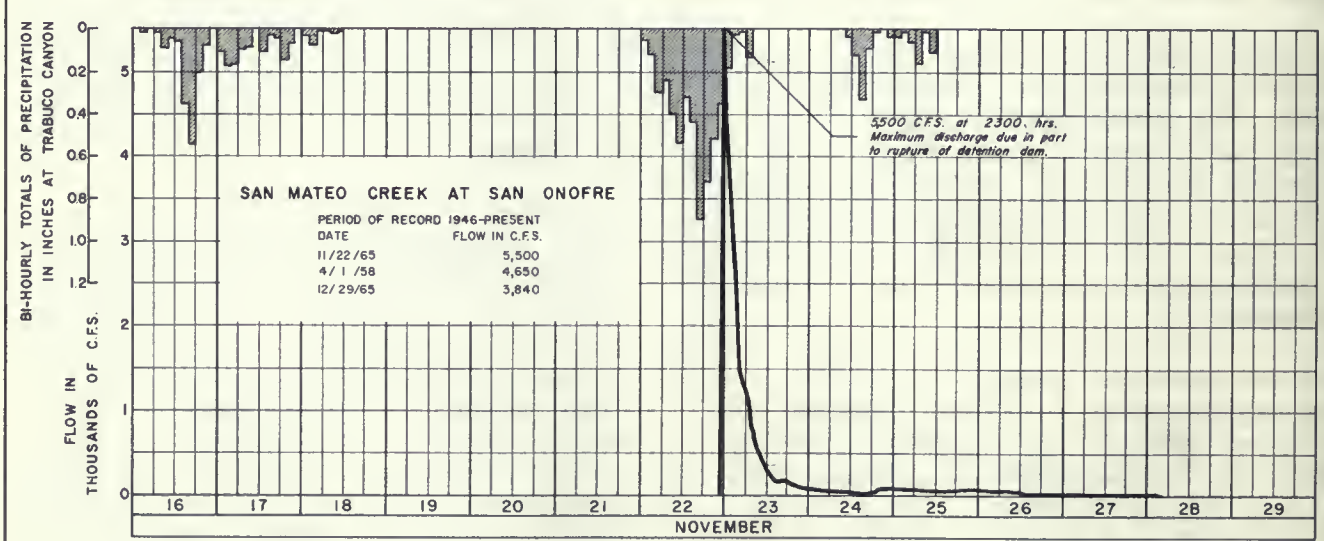
The U. S. Weather Bureau reports that November rainfall totaled more than 30 inches at several stations in these mountains, the maximum being 37.92 inches at Opids Camp. More than 20 inches fell at other mountain stations. Although above normal rainfall occurred again in December, the total was less than in November. At San Gabriel Dam, 23.75 inches fell in November but only 10.53 inches in December; San Gabriel Canyon Powerhouse station recorded 15.03 inches in November but only 6.07 inches in December. In the East Fork San Gabriel River near Camp Bonita (Plate 6), the peak December flow (9.760 cfs on December 29) was greater than the peak November flow (8,200 cfs on November 22) because of the intense rainfall during the December storm.

Runoff in the basin is regulated by six major reservoirs (combined capacity 159,200 acre-feet) and several small flood control reservoirs (combined capacity 19,100 acre-feet). These reservoirs substantially reduced the magnitude of flows in many streams. The major reservoirs are the San Gabriel, Morris, and Santa Fe (combined capacity 113,800 acre-feet) on the San Gabriel; Whittier Narrows (capacity 35,000 acre-feet) on the San Gabriel Rio Hondo River;

PLATE 7







HYDROGRAPHS OF SANTA ANA RIVER, SANTIAGO AND SAN MATEO CREEKS

and Cogswell (capacity 10,400 acre-feet) on the West Fork San Gabriel River.

Santa Ana River Basin

The largest of the South Coastal drainage basins is the Santa Ana River Basin (approximately 2,400 square miles). Within it, the Santa Ana River flows southwest from the southern slopes of the San Bernardino and San Gabriel Mountains to the Pacific Ocean.

A few stations reported very light rain before midnight, November 13. Rain continued intermittently for the next few days. At most stations, it fell heaviest on November 17 and stopped on November 18, although at a few stations traces fell as late as November 19. This first November storm conditioned the ground for major runoff from the storm which followed. Rain fell again over most of the area between November 21 and 25. This rainfall was intense, particularly on November 22 and 23; the resulting floods damaged many areas

The Santa Ana River at Colton (Plate 7) peaked at 25,000 cfs on November 22. Prado Reservoir, with a peak storage of 15,400 acre-feet on November 23, substantially reduced downstream discharge.

Peak flows on Santiago Creek at Modjeska (Plate 7) were 1,500 cfs on November 22 and 1,120 cfs on December 29. Below Santiago Reservoir, the peak flow was 255 cfs on November 22 and 590 cfs on December 29.

The peak flow of City Creek near Highland was 1,310 cfs on November 27 and 1,120 cfs on December 29.

San Juan Creek and Arroyo San Onofre Groups

The streams in this group drain an area of approximately 515 square miles on the western Pacific slopes.

San Onofre Creek near San Onofre reported a peak of 1,310 cfs on November 22, about 50 percent of the 15-year record high. The December storm generated a much lower peak of 790 cfs on December 29.

San Mateo Creek, dry for several months each year, has no regulation above the San Clemente station. On November 22, the unusually high peak November flow was 5,070 cfs; on December 29, the peak December flow was 3,460 cfs. The previous high peak was 4,800 cfs in April 1958. San Mateo Creek at San Onofre peaked at 5,500 cfs, due partially to a ruptured detention dam (Plate 7).

San Juan Creek near San Juan Capistrano is intermittently dry in most years. No regulation exists on the stream above this station. On November 22, the peak flow was 4,080 cfs the second highest recorded since March, 1938; on December 29, it was 1,950 cfs.

San Luis Rey River and San Marcos Creek Group

The streams of this group drain approximately 780 square miles, 670 of them in the Peninsula Range.

A peak of 1,650 cfs flowed through the West Fork San Luis Rey River near Werner Springs on November 22; a peak of 355 cfs, on December 29. In March 1938, peak flow at this point was 2,060 cfs.

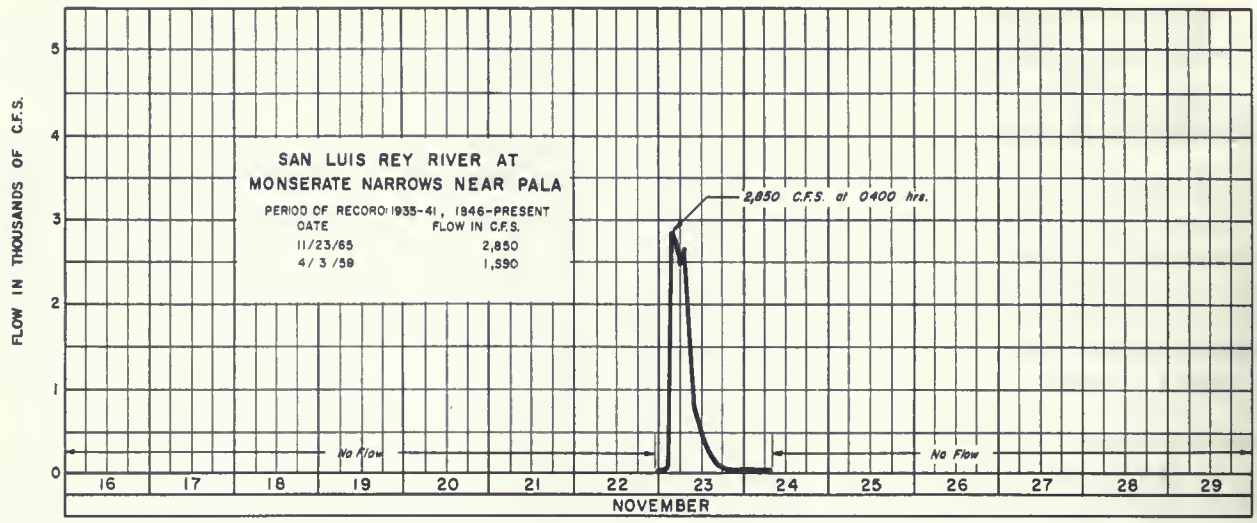
Henshaw Lake (maximum storage capacity, 203,580 acre-feet) regulates the San Luis Rey River. Downstream, the peak flow near Bonsall was 2,560 cfs on November 23, but only 86 cfs on December 30. Neither flow approached that of March 1938: 18,100 cfs. Plate 8 presents a hydrograph of flow at the gage at Monserate Narrows near Pala.

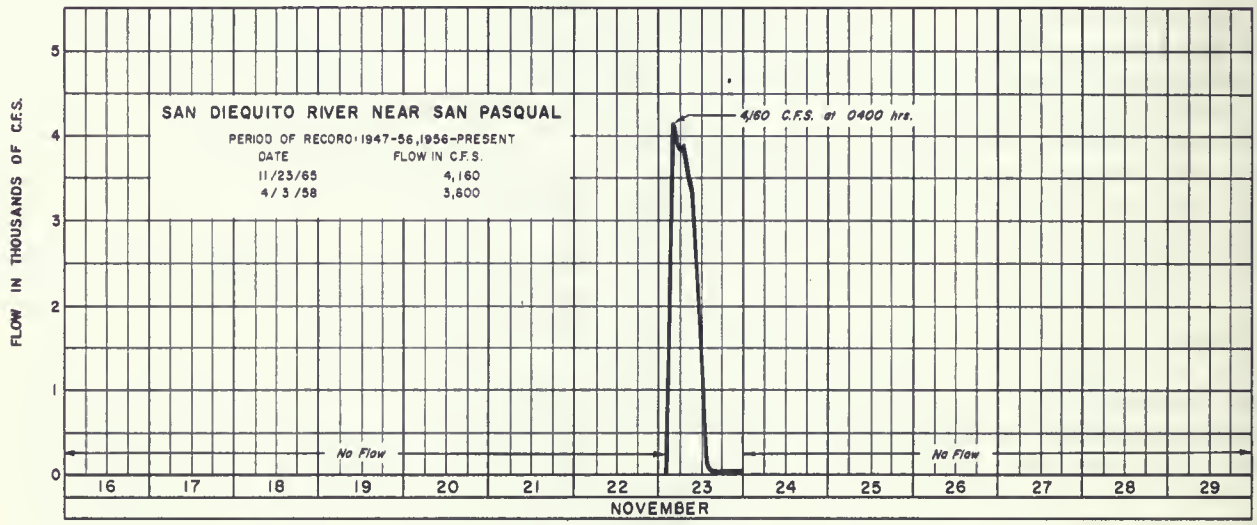
San Dieguito River Basin

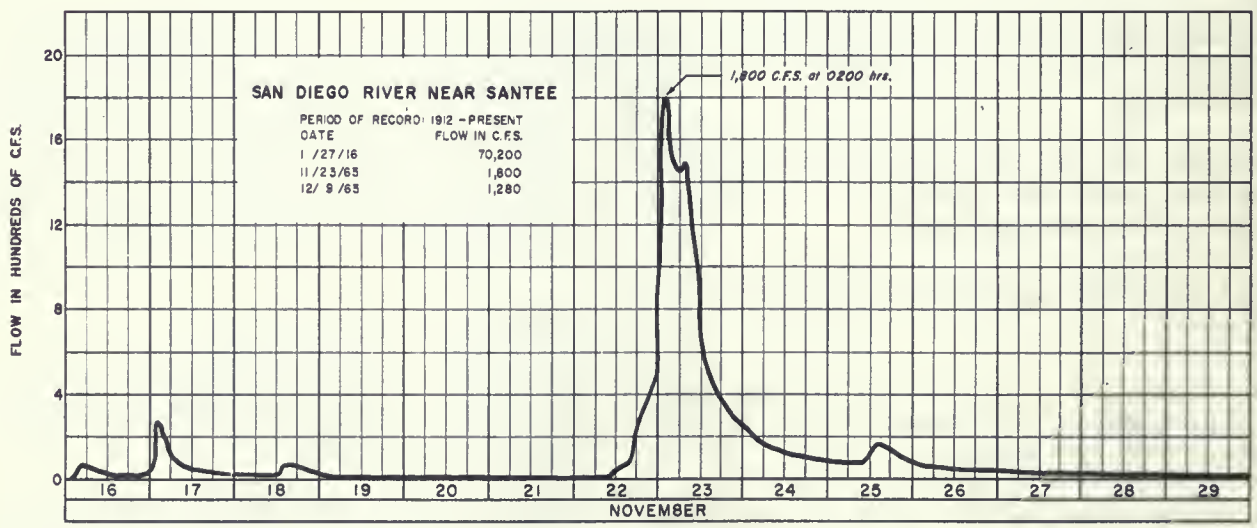
Foothills and mountains comprise about 90 percent of the 330 square-mile San Dieguito River basin.

Although the Santa Ysabel Creek near San Pasqual dries up at times most years, it

PLATE 8







HYDROGRAPHS OF SAN LUIS REY, SAN DIEGUITO AND SAN DIEGO RIVERS

was anything but dry on November 23 when flow peaked at 5,260 cfs; the maximum flow observed at this station was 8,000 cfs in March 1906. Sutherland Reservoir has regulated the flow in the creek since July 1954.

On Guejito Creek near San Pasquel, there is no regulation of flows above the station. A peak flow of 2,550 cfs was recorded on November 23. The previous high flow at this station since the beginning of records in December 1946 was 1,660 cfs occurring in April 1958.

San Diego River Basin

The San Diego River Basin drains about 435 square miles along the Pacific slope of the Laguna Mountains.

The flow at the San Diego River near Santee gage drains more than three-fourths of the area. Cuyamaca, El Capitan, and San Vicente Reservoirs regulate the river and principal tributaries above Santee.

Near Santee, flow peaked at 1,800 cfs on November 23 and at 1,280 cfs on December 9 (Plate 8). Both flows were well below a record peak of 70,200 cfs set in January 1916.

Santa Margarita River Basin

Streams of the Santa Margarita River Basin drain about 740 square miles.

At Temecula, 3.12 inches of rain fell between November 13 and 19. During the November 21-29 storm, 5.75 inches fell -- 4.44 inches in 24 hours. The station reported 2.02 inches of rainfall between December 28 and 31. In all, 13.92 inches of rain fell during November and December.

The peak November flow of Murrieta Creek at Temecula was 3,700 cfs on November 23, about 20 percent of the 1943 record. During December, a peak flow of 5,020 cfs occurred on the 29th (Plate 9).

In Santa Margarita River near Temecula, flow peaked at 4,200 cfs on November 23, and at 5,520 cfs on December 29; both peaks were well below the record peak of 25,000 cfs in February 1927.

Sweetwater, Otay, and Tia Juana River Basins

From the San Diego River Basin, these three basins extend southward. In California, they drain an area of approximately 728 square miles. In Mexico, the Tia Juana River basin drains an additional 1,200 square miles.

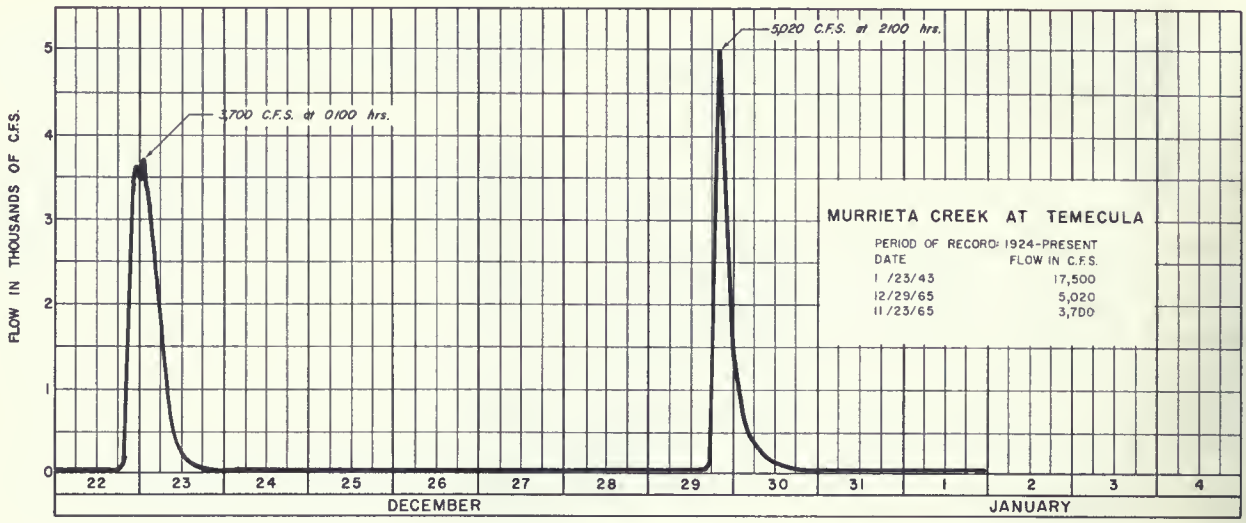
Rainfall was well above normal throughout the area during November and December 1965. At Barrett Dam 8.79 inches fell in November -- 7.63 inches more than normal; in December 4.87 inches fell -- 1.84 inches more than normal.

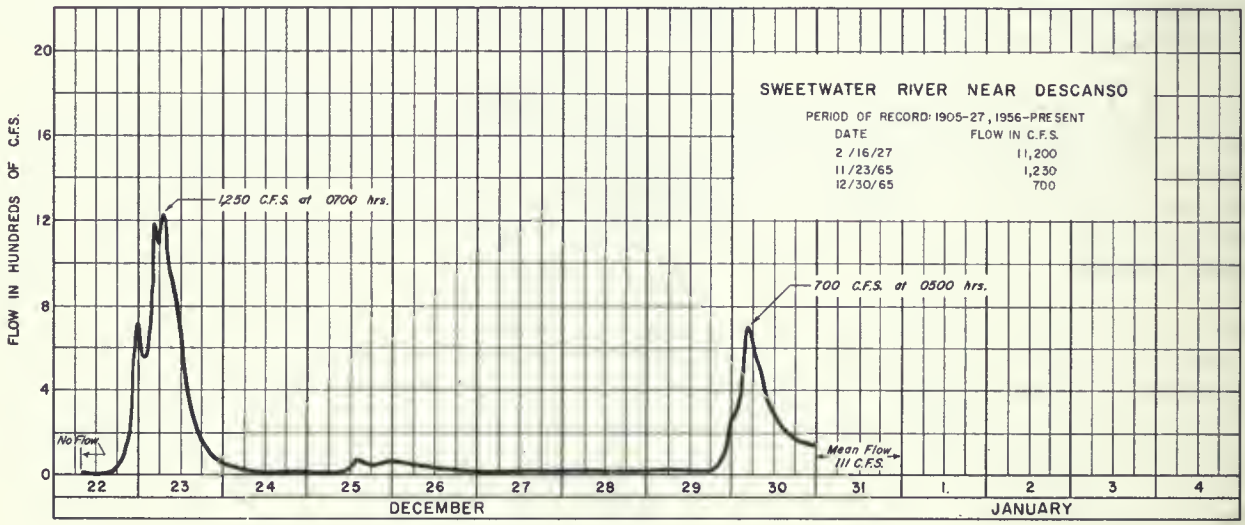
Sweetwater River near Descanso (Plate 9) peaked at 1,230 cfs on November 23, and at 700 cfs on December 30. Although the November peak was well below the 11,200 cfs recorded in February, 1927, the river did overflow, causing flood damage.

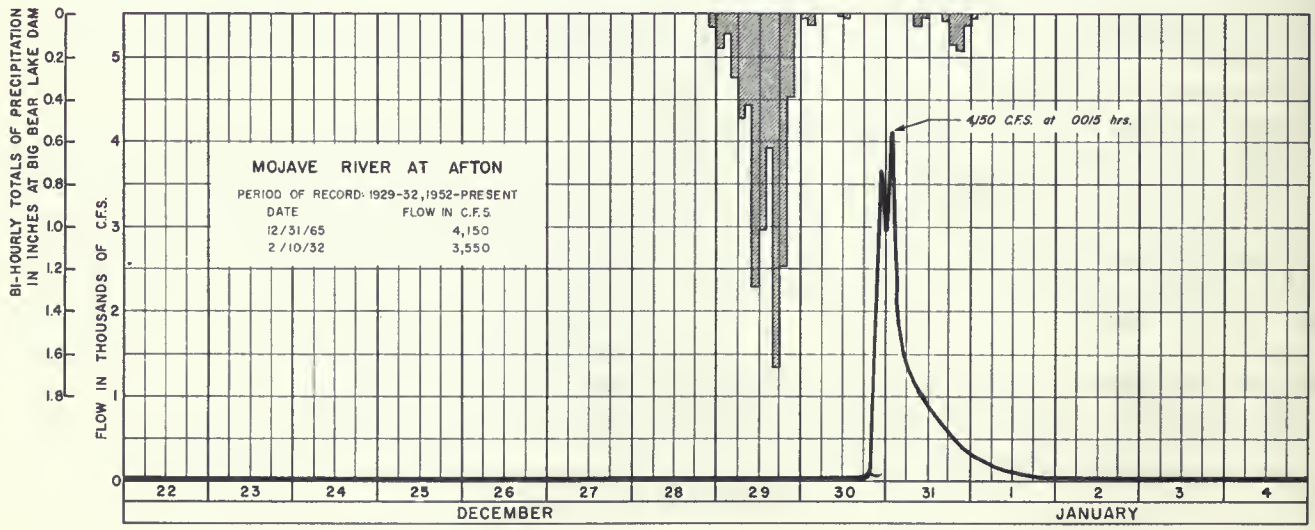
In the Otay River Basin near the Jamul stream gage, Jamul Creek, often dry, peaked at 680 cfs on November 23 and 51 cfs on December 30.

The Tia Juana River near Nestor peaked at 267 cfs on November 23 and at 145 cfs on December 16. During the entire previous water year (October 1, 1964, to September 30, 1965), the flow at this point never exceeded 1 cfs. Morena and Barrett Reservoirs in the United States and Rodrigues Reservoir in Mexico regulate flows in the river.

PLATE 9







HYDROGRAPHS OF MURRIETA CREEK, SWEETWATER AND MOJAVE RIVERS

Table 4: Reservoir Operations in South Coastal Hydrographic Area: November 13, 1965 to January 4, 1966

Stream	Reservoir	Capacity Acre-Feet	Storage Nov. 13, 1965 Acre-Feet	Peak Storage in Acre-Feet and Date	Peak Inflow in CFS and Date	Peak Discharge in CFS and Date
Sante Ynez River	Lake Cachuma	204,900	117,870	172,400* 1/ 4/66	8,170** 12/30/65	29 11/15/65
Santa Ynez River	Gibraltar	15,000	10,480	15,300 12/29/65	8,900 12/29/65	6,700 12/29/65
Piru Creek	Lake Piru	100,000	5,880	49,800* 1/ 4/66	9,700 12/29/65	350 12/25/65
Coyote Creek	Canitas	250,000	39,740	72,580* 1/ 4/66	3,490 12/30/65	40 11/ 4/65
San Gabriel River	San Gabriel	44,610	1,050	21,740 1/ 1/66	27,180 12/29/65	9,070 11/23/65
W. Fork San Gabriel Riv.	Cogswell	10,450	200	7,840 1/ 4/66	12,200 12/29/65	2,570 11/22/65
San Gabriel River	Santa Fe	33,000	0	7,280 11/23/65	10,840 11/23/65	11,100 11/23/65
San Gabriel Rio Hondo	Whittier Narrows	35,000	4	1,820 12/29/65	18,840 12/29/65	14,350 12/29/65
Big Tujunga	Hanson	35,800	600	8,720 12/30/65	5,200 11/22/65	3,240 11/23/65
Los Angeles River	Sepulveda	17,400	0	2,120 12/29/65	17,040 12/29/65	11,150 11/29/65
Bear Creek	Big Bear Lake	72,400	19,455	32,450* 1/ 4/66	500** 12/2-7/65	0
Santiago Creek	Santiago Creek	25,000	4,050	11,800* 1/ 4/66	N.A.	0
San Jacinto River	Railroad Canyon	15,200	1,453	4,690* 1/ 4/66	371 (Missing)	2 (Missing)
Trib. Cajalco Creek	Lake Mathews	182,000	101,650	171,230 12/31/65	1,546 12/16/65	1,070 11/13/65
Santa Ana River	Prado	223,000	5	15,437 11/23/65	30,600 11/23/65	1,040 11/23/65
Cottonwood Creek	Morena	50,200	199	501* 1/ 4/66	42 11/22/65	0
Cottonwood Creek	Barrett	44,860	1,330	2,670* 1/ 4/66	185 11/23/65	0
San Diego River	El Capitan	116,450	13,830	17,930 1/ 2/66	480 11/23/65	81 11/23/65
Santa Ysabel Creek	Sutherland	29,000	3,240	5,310* 1/ 4/66	300 11/22/65	0
San Dieguito River	Lake Hodges	33,550	1,090	4,660 12/31/65	930 11/22/65	5 11/22/65
Sweetwater River	Sweetwater Lake	27,690	2,350	3,450 1/ 3/66	100 11/23/65	0
Sweetwater River	Lake Loveland	27,700	1,940	3,120* 1/ 4/66	150 11/23/65	0
San Luis Rey River	Lake Henshaw	203,580	5,250	11,510* 1/ 4/66	390 12/30/65	All discharges to pipelines

LEGEND

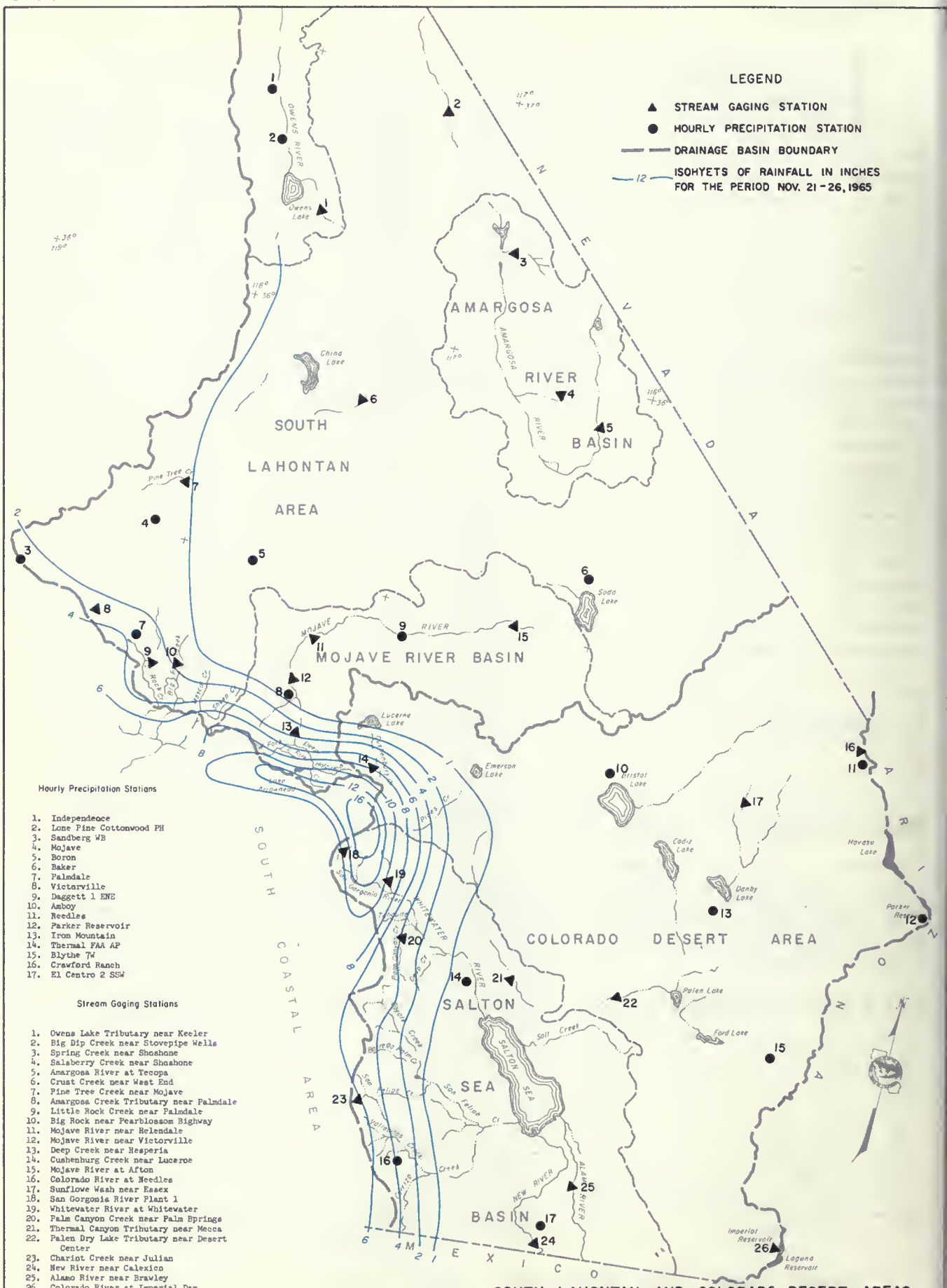
N.A. - Not Available
* - Reservoir storage increasing on January 4, 1966. Peak storage occurred at later date.
** - Mean daily values

Reservoir Operations in South Coastal Hydrographic Area

Reservoirs substantially reduced the magnitude of flow in many Southern California streams. Such reservoirs were not only those constructed for flood control, but also those constructed primarily to conserve water. Their effectiveness was evident both from the fact that reservoir inflow exceeded reservoir discharge and from the amount of water detained.

Table 4 shows operations of certain of these reservoirs during the flood periods.

PLATE 10



Hourly Precipitation Stations

1. Independence
2. Lone Pine Cottonwood PH
3. Sandberg WB
4. Mojave
5. Boron
6. Baker
7. Palmdale
8. Victorville
9. Daggett 1 ENE
10. Amboy
11. Needles
12. Parker Reservoir
13. Iron Mountain
14. Thermal FAA AP
15. Blythe TW
16. Crawford Ranch
17. El Centro 2 SSW

Stream Gaging Stations

1. Owens Lake Tributary near Keeler
2. Big Dip Creek near Stovepipe Wells
3. Spring Creek near Shoshone
4. Salsberry Creek near Shoshone
5. Amargosa River at Tecopa
6. Crust Creek near West End
7. Pine Tree Creek near Mojave
8. Amargosa Creek Tributary near Palmdale
9. Little Rock Creek near Palmdale
10. Big Rock near Pearblossom Highway
11. Mojave River near Helendale
12. Mojave River near Victorville
13. Deep Creek near Hesperia
14. Cushenbury Creek near Lucerne
15. Mojave River at Afton
16. Colorado River at Needles
17. Sunflower Wash near Essex
18. San Gorgonio River Plant 1
19. Whitewater River at Whitewater
20. Palm Canyon Creek near Palm Springs
21. Thermal Canyon Tributary near Mecca
22. Palen Dry Lake Tributary near Desert Center
23. Chariot Creek near Julian
24. New River near Calexico
25. Alamo River near Brawley
26. Colorado River at Imperial Dam

SOUTH LAHONTAN AND COLORADO DESERT AREAS
PRECIPITATION AND STREAM GAGING STATION LOCATION
AND
NOVEMBER 1965 STORM ISOHYETAL MAP

Lahontan Hydrographic Area (Southern Portion)

The principal streams in the area, the Mojave River and tributaries, drain the northern slopes of the San Bernardino and San Gabriel Mountains. There are no flood control or watershed protection projects in the basin.

In the desert, rainfall is usually light, although local thunderstorms have contributed the equivalent of mean seasonal rainfall in less than two hours. In the San Bernardino and San Gabriel Mountains, storms are more frequent and high intensities often accompany heavy rains.

In November, precipitation in the area, including the desert, was from 4 to 8 times more than normal; and in December, from 2 to 3 times more than normal.

Runoff from the late November and December storms was about the same, although peak flows in the Mojave River and tributaries were usually higher in December.

On December 29, the peak flow in West Fork Mojave River near Hesperia was 21,200 cfs, more than $2\frac{1}{2}$ times greater than that of November 22.

Deep Creek near Hesperia, peaked at 21,700 cfs on November 22, the highest flow since that of 46,600 cfs in March 1938. On December 29, it peaked at 20,800 cfs.

The peak flow in the Mojave River at Afton, 4,150 cfs on December 31, (Plate 9) was the peak of record, although it undoubtedly was exceeded in March 1938.

Plate 10, an isohyetal map of the second November storm, locates both precipitation and stream gaging stations in the area.

Colorado Desert Hydrographic Area

This area includes the portion of the Colorado River Basin that is within California, the Salton Sea Basin and local sinks east of the South Coastal Area.

Precipitation in the area is usually light, the seasonal average being 7.9 inches. Most runoff is from the San Bernardino Mountains and drains through the Whitewater River into Salton Sea.

Although near-record rainfall during the first November storm produced only minor runoff, the storm conditioned the ground for the intense runoff of the second November storm. Runoff filled normally dry washes to overflowing with turbulent, debris-laden water.

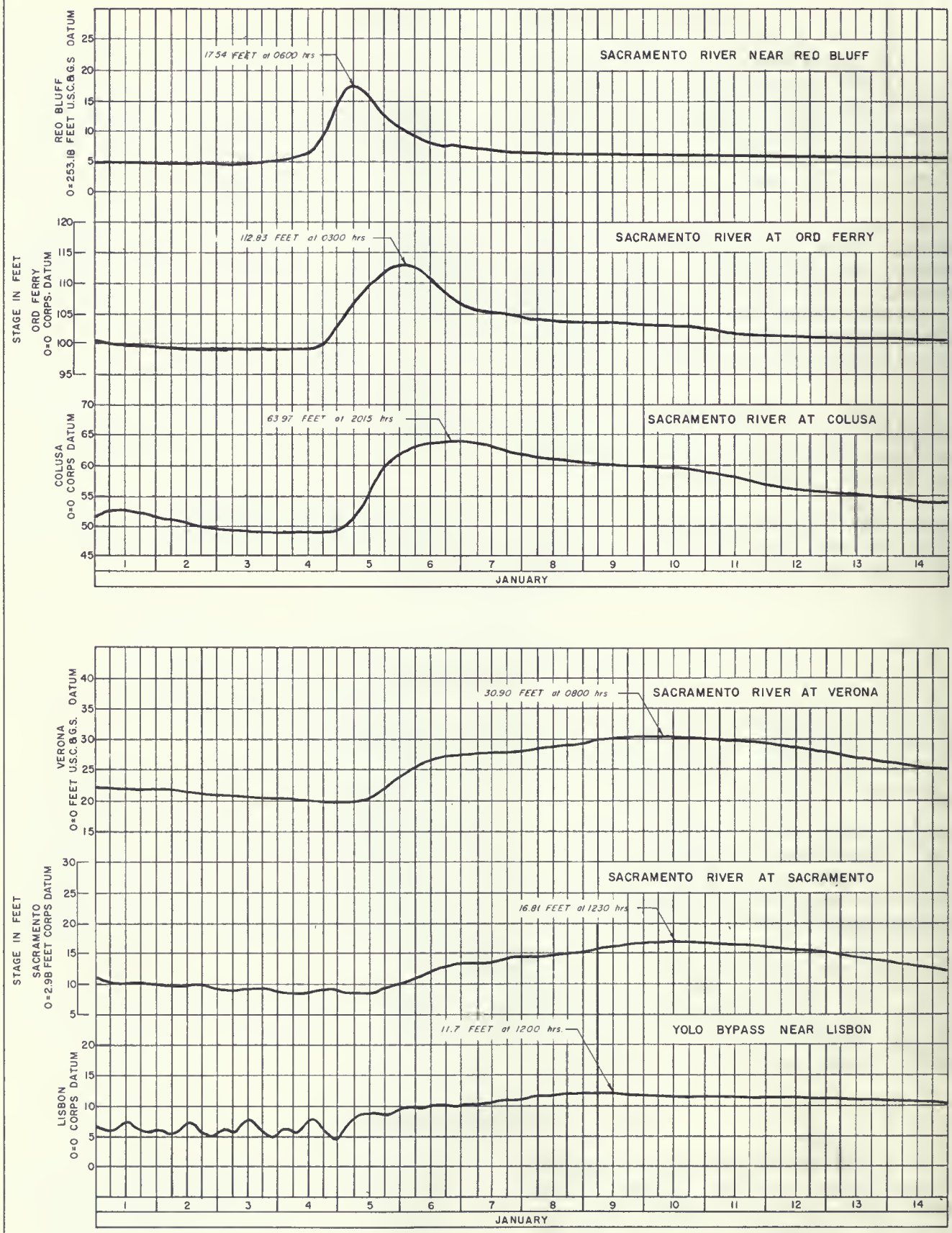
On November 22, a peak flow of 2,900 cfs was recorded in Tahquitz Creek near Palm Springs; and one of 1,520 cfs, in Palm Canyon Creek near Palm Springs. These flows were the highest and second highest, respectively, of record. A record peak flow of 4,200 cfs in Snow Creek near White Water occurred on November 22.

Plate 10 locates precipitation and stream gaging stations in the area and depicts the second November storm.

Central Valley Hydrographic Area

It is difficult to generalize regarding precipitation in the Central Valley (Plate 1) in terms of light, moderate, or heavy. Storms sweeping in from the ocean over the Coastal Ranges and across the valley are influenced by changes in elevation. As elevation increases on the west slope of the Coastal Ranges,

PLATE II



GAGE HEIGHTS OF SACRAMENTO RIVER AND YOLO BYPASS

precipitation increases. As elevation decreases down the east slope, precipitation diminishes. In general, little variation occurs as storms pass eastward across the Central Valley floor; but as they ascend the west slope of the Sierra Nevada Mountains, precipitation again increases. It reaches its maximum near the divide. Winter snows of the Sierra Nevada are heavy above 3,000 feet in the north and 4,000 feet in the south. Their depths are exceeded in few parts of the United States.

Although January precipitation was well below normal on the valley floor, it was well above normal in the northern mountains. Mount Shasta City reported 51 inches of snow on the ground in January, the second greatest depth of record and the greatest since 1937. Between December 24 and January 4, snowfall totaled 105 inches. Heavy snows on January 2, 3, and 4 closed northern mountain highways and schools, downed power and telephone lines, and crushed a number of buildings.

Sacramento River and Tributary Basins

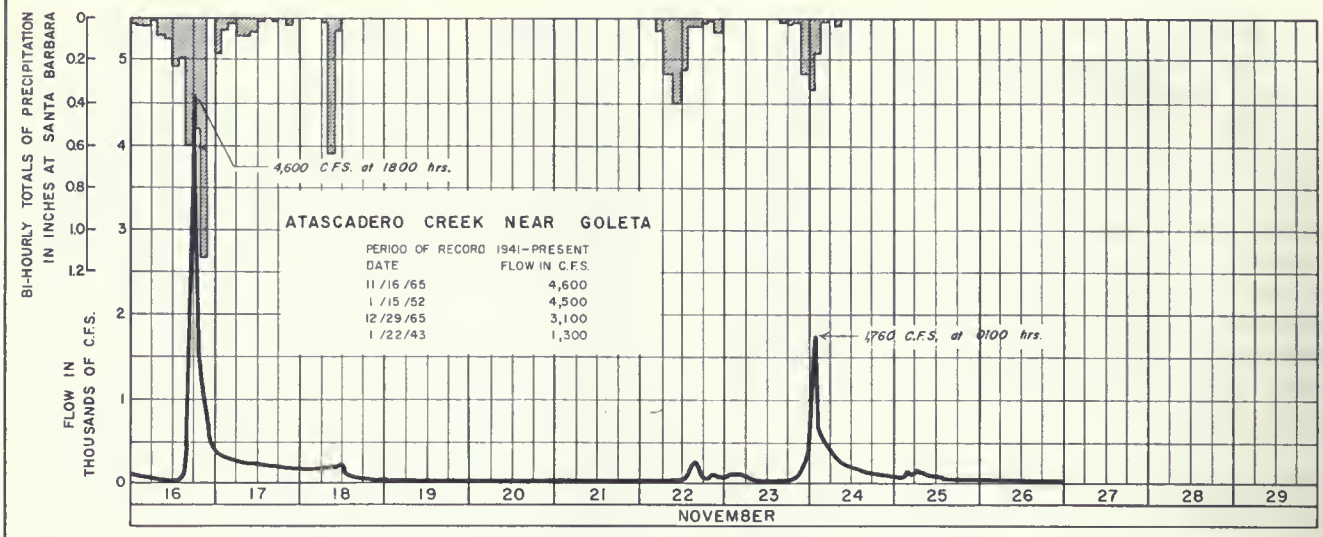
High flows into Shasta Lake between January 3 and 10 increased storage by about 215,000 acre-feet. Just below Shasta Lake, the peak discharge in the Sacramento River at Keswick during this 7-day period was 15,000 cfs. Downstream from Keswick, flows in the tributary streams were moderate to high. To the east, Cow Creek peaked at 31,400 cfs; Battle Creek, at 1,200 cfs; Antelope Creek, at 2,540 cfs; and Mill Creek, at 2,760 cfs. To the west, Cottonwood Creek peaked at 14,700 cfs; Thomes Creek, at 4,180 cfs; and Stony Creek at 12,800 cfs. Downstream at Ord Ferry, the Sacramento River peaked at 83,200 cfs on January 6; the record peak of 370,000 cfs occurred in February 1940.

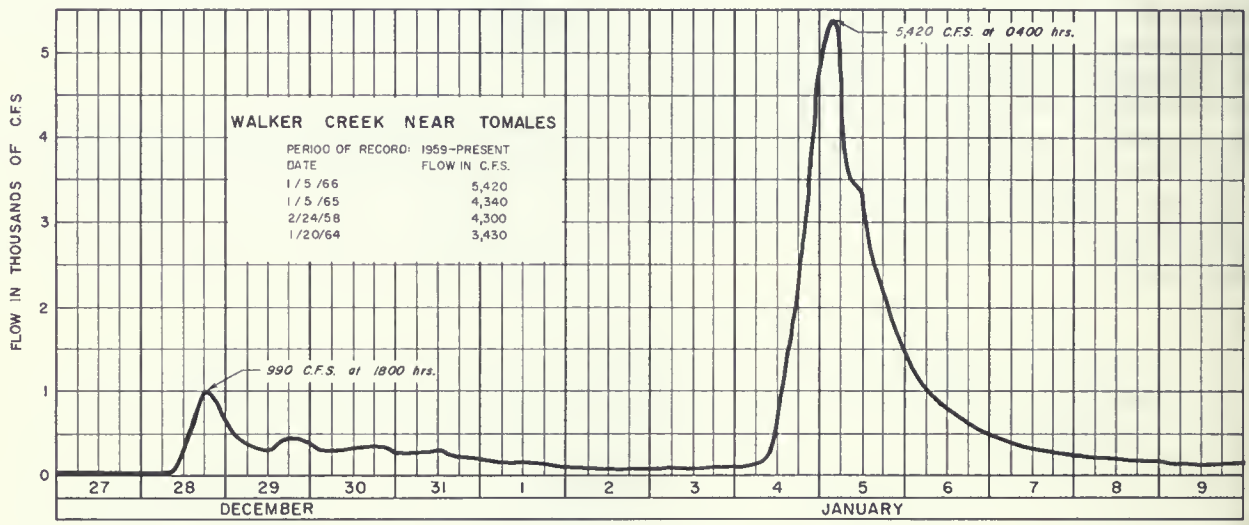
In the Feather, Yuba, and American River Basins, flows were far below record peaks. The Middle Fork Feather River near Merrimac had a flow of only 4,760 cfs; the record was 86,200 cfs in December 1964. The Feather River at Oroville had a flow

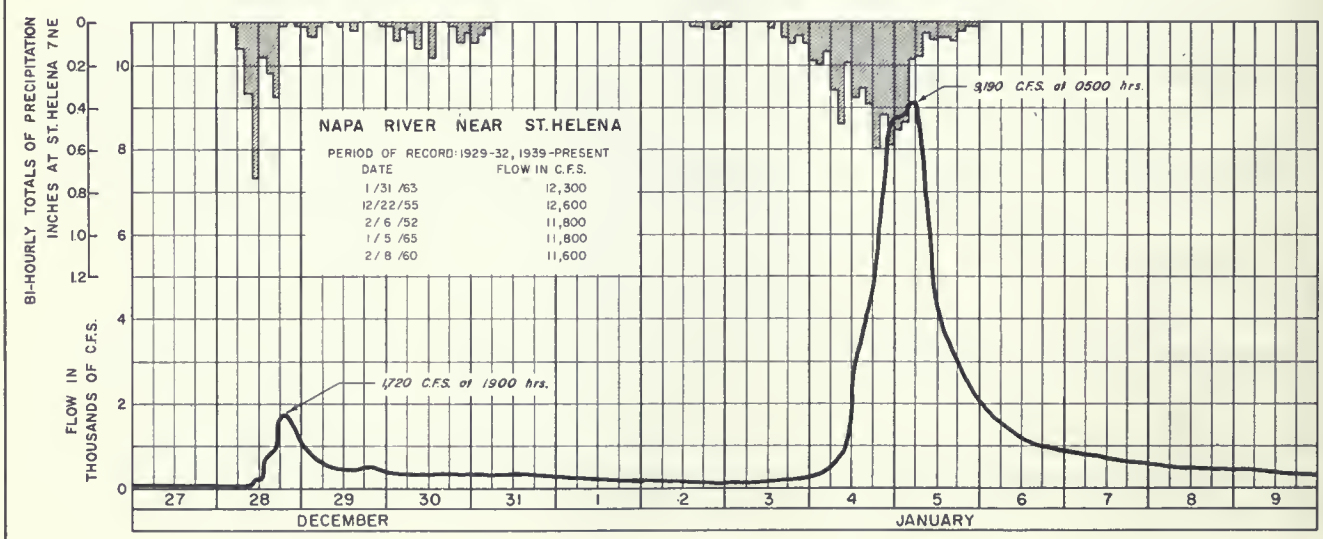
Table 5: Sacramento River Flood Control Project Weir Overflow Data

Weir	Flood Stage in Feet	Weir Overflow Dates From-	To-	Crest Stage	Crest Date
Moulton Weir	76.8	0700 hr. Jan. 6	0530 hr. Jan. 7	77.8	1800 hr. Jan. 6
Colusa Weir	61.8	1700 hr. Jan. 5	0400 hr. Jan. 10	67.0	2000 hr. Jan. 6
Tisdale Weir	45.5	2000 hr. Jan. 5	0900 hr. Jan. 13	48.3	0100 hr. Jan. 7
Fremont Weir	33.5	--	--	33.5	0200 hr. Jan. 10

PLATE 12







HYDROGRAPHS OF ATASCADERO AND WALKER CREEKS AND NAPA RIVER

of only 15,300 cfs; the record was 230,000 cfs in 1964. The Yuba River at Englebright Dam peaked at 6,680 cfs; the record was 171,700 cfs in 1964. The American River at Fair Oaks peaked at 4,100 cfs; the record was 170,000 cfs in 1950.

Within the area of the Sacramento River Flood Control Project, all flows were well below maximum project design quantities. At Sacramento, the Sacramento River peaked at 53,000 cfs on January 10; project design flow here is 110,000 cfs. Moulton, Colusa and Tisdale Weirs overflowed (Table 5). Plate 11 shows stages of the Sacramento River and Yolo Bypass at various points.

San Joaquin River and Tributary Basins

Rainfall from the two November storms was well above normal at most mountain stations throughout the basins. Tiger Creek Powerhouse reported a November total of 10.53 inches -- 5.92 inches above normal. Calaveras Big Trees recorded 15.34 inches -- 10.44 inches above normal. Farther south in the Sierra Nevada Mountains, Three Rivers Edison Powerhouse No. 2 reported 4.23 inches -- 2.54 inches above normal. December rainfall totals, much less than those of November, were below normal at many stations.

Except for the Cosumnes River, the principal tributaries of the San Joaquin River are controlled by reservoirs; these effectively stored runoff from the storms of November and December. All streamflows were well below flood stages and record peak flows.

San Francisco Bay Hydrographic Area

Streamflow in the San Francisco Bay Hydrographic Area (Plate 1) ranged from moderate to high. Sharp rises in the streams of the North Bay area resulted from intense rainfall during January 4 and 5. At St. Helena, 6.85 inches of rain fell; at Calistoga, 5.40 inches fell; and at Napa, 7.31 inches fell.

On January 5, the Napa River near St. Helena (Plate 12) peaked at 9,190 cfs; the record peak, in 1955 was 12,600 cfs. 5.41 inches of rain fell in the Sonoma Creek Basin; 6.67 inches fell at Santa Rosa. Sonoma Creek at Boyes Hot Springs peaked at 6,400 cfs; the record was 8,900 cfs in 1955. Walker Creek, one of the smaller creeks near Tomales, registered a new peak flow of record; 5,420 cfs (Plate 12).

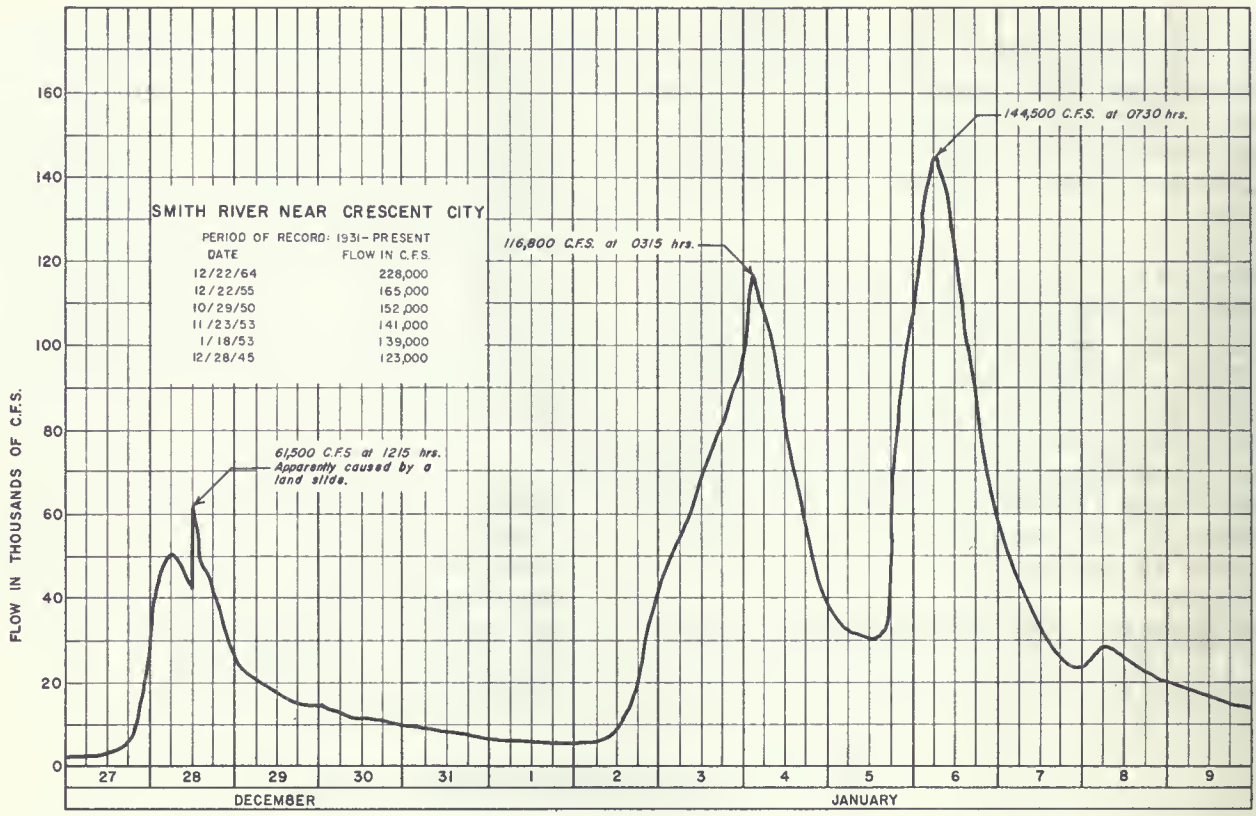
Flows in East Bay, South Bay, and Peninsula area streams generally were low: Walnut Creek at Walnut Creek peaked at 1,410 cfs on December 28, 1965; high was 12,200 cfs in 1958. Alameda Creek near Niles peaked at only 750 cfs on December 29; the high was 29,000 cfs in December, 1955.

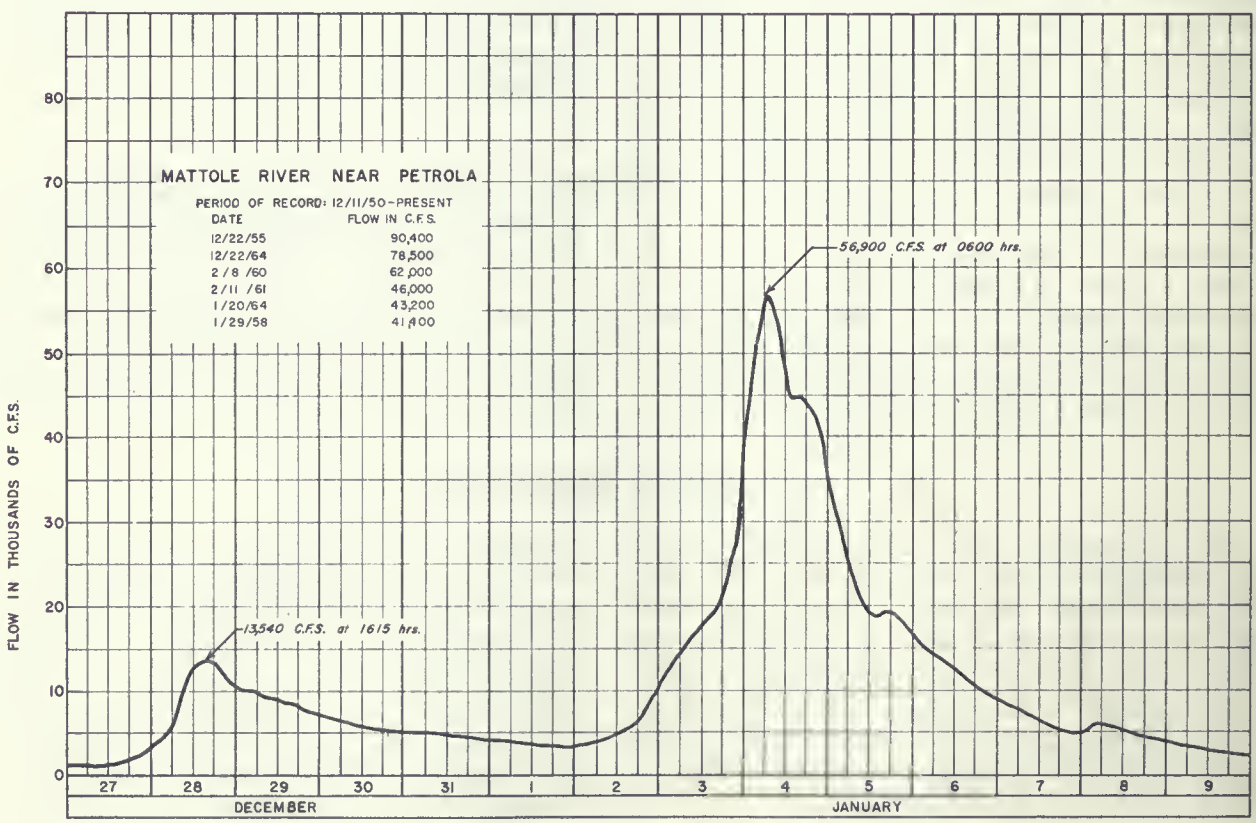
Central Coastal Hydrographic Area

In all streams in the northern and central sections of the Central Coastal Hydrographic Area (Plate 1) runoff was low. San Lorenzo River at Big Trees registered a peak flow of 1,080 cfs on December 29; the record, set in 1955, is 30,400 cfs. Salinas River near Pozo registered a peak of 1,320 cfs on November 24; the record, set in 1943, is 7,210 cfs.

Only to the extreme south of the hydrographic area was runoff high. Near Goleta, runoff in Atascadera Creek set a new record: 4,600 cfs (Plate 12). The old record, set in January 1952, was lower by 100 cfs. On November 16, San Jose Creek near Goleta peaked at 1,700 cfs, only 260 cfs less than a record set in April 1941. On November 24, Carpinteria Creek near Carpinteria peaked at 2,300 cfs, only 140 cfs less than the 1952 record.

PLATE 13





HYDROGRAPHS OF SMITH AND MATTOLE RIVERS

Lahontan Hydrographic Area (Northern Portion)

This area (Plate 1) contains eight contiguous drainage basins; Alkali Lakes, Eagle Lake, Honey Lake, Truckee River, Carson River, Walker River, Mono Lake, and Owens River Basins. The headwaters of these basins rise along the eastern slopes of the Warner and Sierra Nevada Mountains. The basins have no outlets to the sea; their drainage terminates in lakes and sinks.

Rainfall in October and December was below normal; in November, although above normal, it was of low intensity. Runoff was low or moderate, well below record peaks.

Table 6: Reservoir Operations in North Coastal Hydrographic Area: January 1-17, 1966

Stream	Reservoir	Capacity Acre-Feet	Storage Jan. 1, 1966 Acre-Feet	Peak Storage in Acre-Feet and Date	Peak Inflow in CFS and Date	Peak Discharge in CFS and Date
Shasta River	Dwinnel	72,000	25,180	28,650* 1/17/66	N.A.	0
Trinity River	Clair Engle Lake	2,500,000	1,970,300	2,005,500* 1/17/66	1,630**	3,180 1/10/66
Mad River	Ruth	51,800	40,880	56,330 1/ 5/66	7,084** 1/ 5/66	2,886** 1/ 5/66
E. Fork Russian River	Lake Mendocino	122,500	67,000	90,400 1/ 6/66	11,160 1/ 4/66	3,440 1/ 6/66
Clear Creek	Whiskeytown	250,000	206,450	213,270 1/ 6/66	2,990** 1/ 4/66	3,030** 1/ 7/66
Sacramento River	Shasta	4,500,000	3,186,900	3,394,100 1/ 9/66	44,530 1/ 4/66	14,190** 1/17/66
Little Stony Creek	East Park	51,000	22,400	42,480* 1/17/66	3,740** 1/ 5/66	0
Stony Creek	Stony Gorge	50,000	21,100	43,730 1/ 7/66	6,500** 1/ 5/66	1,490** 1/ 8/66
Stony Creek	Black Butte	160,000	61,760	86,100 1/ 6/66	12,700** 1/ 4/66	4,950 1/ 7/66
No. Fork Feather River	Lake Almanor	1,308,000	623,070	629,120 1/11/66	10,280** 1/ 4/66	5,540** 1/2&4/66
American River	Folsom	1,000,000	559,000	592,800 1/12/66	6,030** 1/ 5/66	2,590** 1/ 9/66

LEGEND

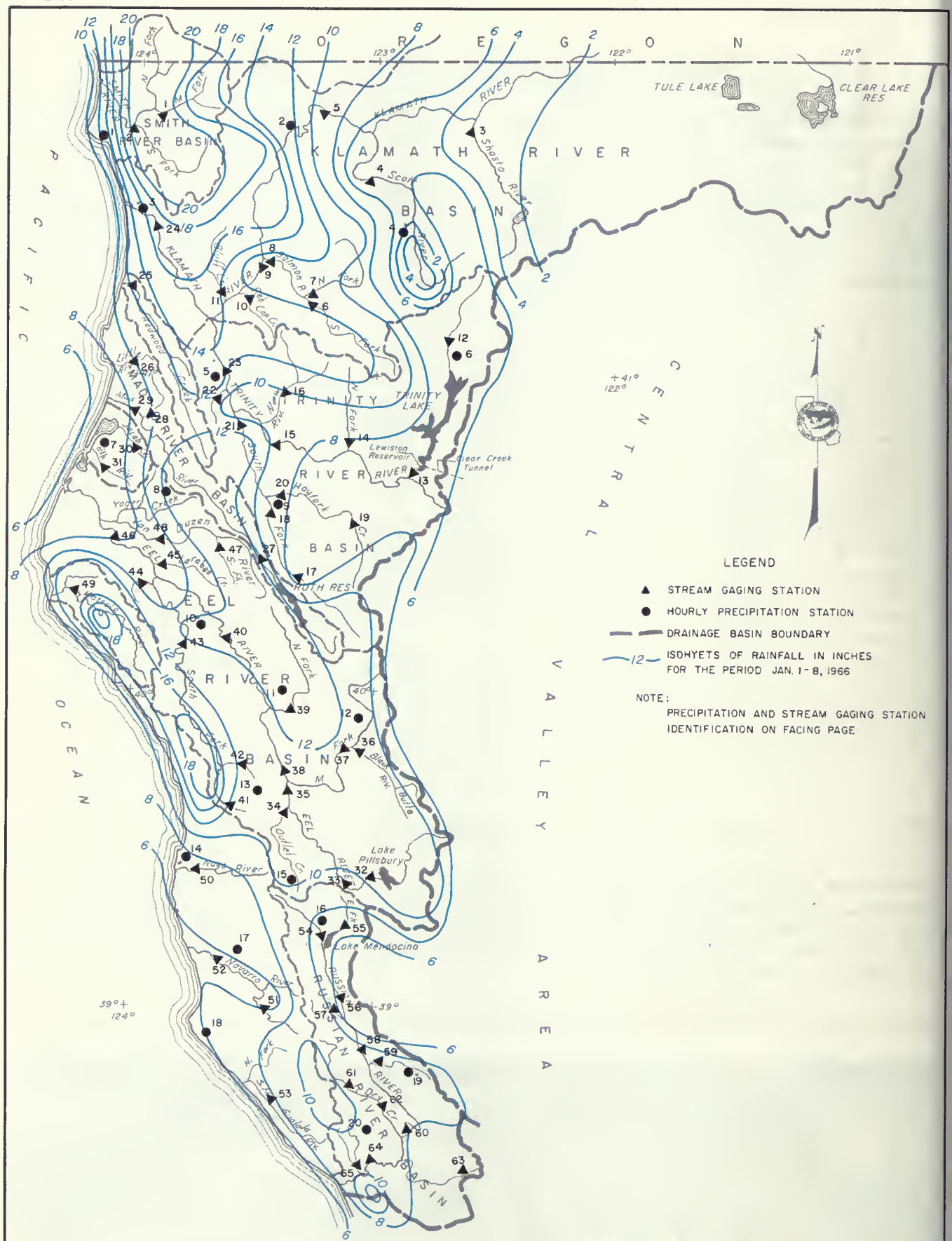
N.A. - Not Available
* - Reservoir storage increasing on January 4, 1966. Peak storage occurred at later date.
** - Mean daily values

Reservoir Operations in North Coastal Hydrographic Area

Reservoirs substantially reduced the magnitude of flow in many Northern California streams. Such reservoirs were not only those constructed for flood control, but also those constructed primarily to conserve water. Their effectiveness was evident both from the fact that reservoir inflow exceeded reservoir discharge and from the amount of water detained.

Table 6 shows operations of certain of these reservoirs during the flood periods.

PLATE 14



NORTH COASTAL AREA
PRECIPITATION AND STREAM GAGING STATION LOCATION
AND
JANUARY 1966 STORM ISOHYETAL MAP

Stream Gaging Stations

1. Middle Fork Smith River at Gasquet
2. Smith River near Crescent City
3. Shasta River near Yreka
4. Scott River near Fort Jones
5. Klamath River near Seiad Valley
6. South Fork Salmon River near Forks of Salmon
7. North Fork Salmon River near Forks of Salmon
8. Salmon River at Somesbar
9. Klamath River at Somesbar
10. Red Cap Creek near Orleans
11. Bluff Creek near Weitchpec
12. Trinity River above Coffee Creek near Trinity Center
13. Trinity River of Lewiston
14. North Fork Trinity River at Helena
15. Trinity River near Burnt Ranch
16. New River at Denny
17. South Fork Trinity River at Forest Glenn
18. South Fork Trinity River near Hyampom
19. Hayfork Creek near Hayfork
20. Hayfork Creek near Hyampom
21. South Fork Trinity River near Salyer
22. Willow Creek at Willow Creek
23. Trinity River near Hoopa
24. Klamath River near Klamath
25. Redwood Creek at Orick
26. Little River of Crannell
27. Mad River near Forest Glenn
28. North Fork Mad River near Korbel
29. Mad River near Arcata
30. Jacoby Creek near Freshwater
31. Elk River near Falk
32. Eel River below Scott Dam near Potter Valley
33. Eel River at Van Arsdale Dam, near Potter Valley
34. Outlet Creek near Longvale
35. Eel River above Dos Rios
36. Black Butte River near Covelo
37. Middle Fork Eel River below Black Butte River, near Covelo
38. Eel River below Dos Rios
39. North Fork Eel River near Mina
40. Eel River at Alderpoint
41. South Fork Eel River near Branscomb
42. Tenmile Creek near Laytonville
43. South Fork Eel River near Miranda
44. Bull Creek near Weott
45. Larabee Creek near Holmes
46. Eel River at Scotia
47. South Fork Van Duzen River near Bridgeville
48. Van Duzen River near Bridgeville
49. Mattole River near Petrolia
50. Noyo River near Fort Bragg
51. Rancheria Creek near Boonville
52. Navarro River near Navarro
53. South Fork Gualala River near Annapolis
54. Russian River near Ukiah
55. East Fork Russian River near Calpella
56. Russian River near Hopland
57. Feliz Creek near Hopland
58. Russian River near Cloverdale
59. Big Sulphur Creek near Cloverdale
60. Russian River near Healdsburg
61. Dry Creek near Cloverdale
62. Dry Creek near Geyserville
63. Santa Rosa Creek near Santa Rosa
64. Russian River near Guerneville
65. Austin Creek near Cazadero

North Coastal Hydrographic Area

Following heavy rains on January 3 and 4, rivers rose significantly in the Smith, Eel, Mattole, and Russian River Basins and in the Redwood Creek Basin. Although the rains were as heavy over the Mad, Klamath, and Trinity River Basins, runoff was relatively low.

Plate 14 depicts the January storm and locates precipitation and stream gaging stations in the area.

Mattole Basin

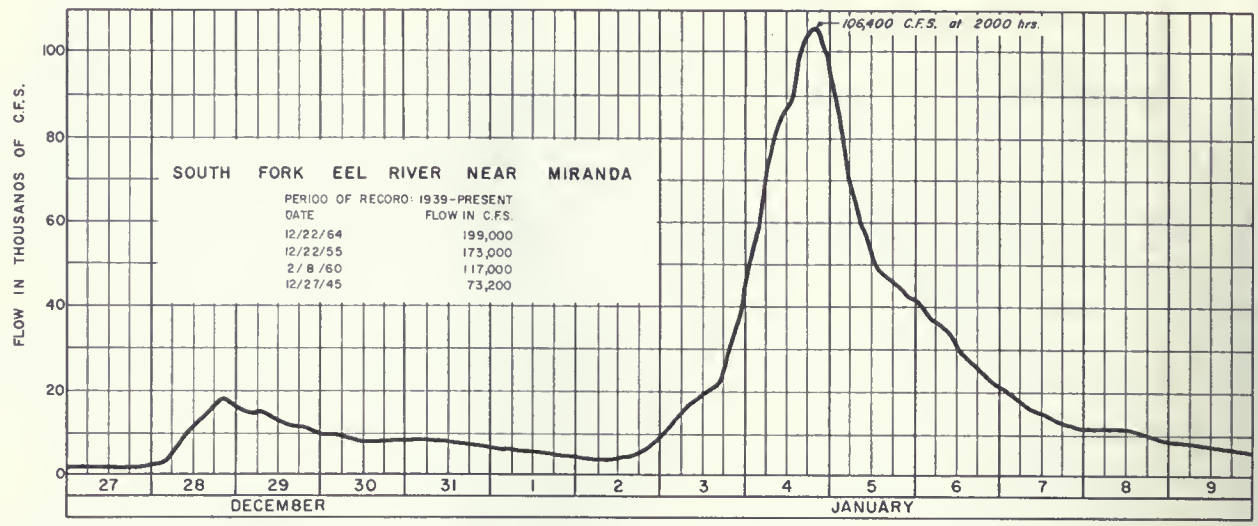
Heavy rainfall (15.7 inches between January 3 and 6) over the 240-square-mile drainage area above the Mattole River generated a peak flow near Petrolia stream gage of about 56,900 cfs at 6 a.m. on January 4 (Plate 13). The record flow here was 90,400 cfs in December, 1955.

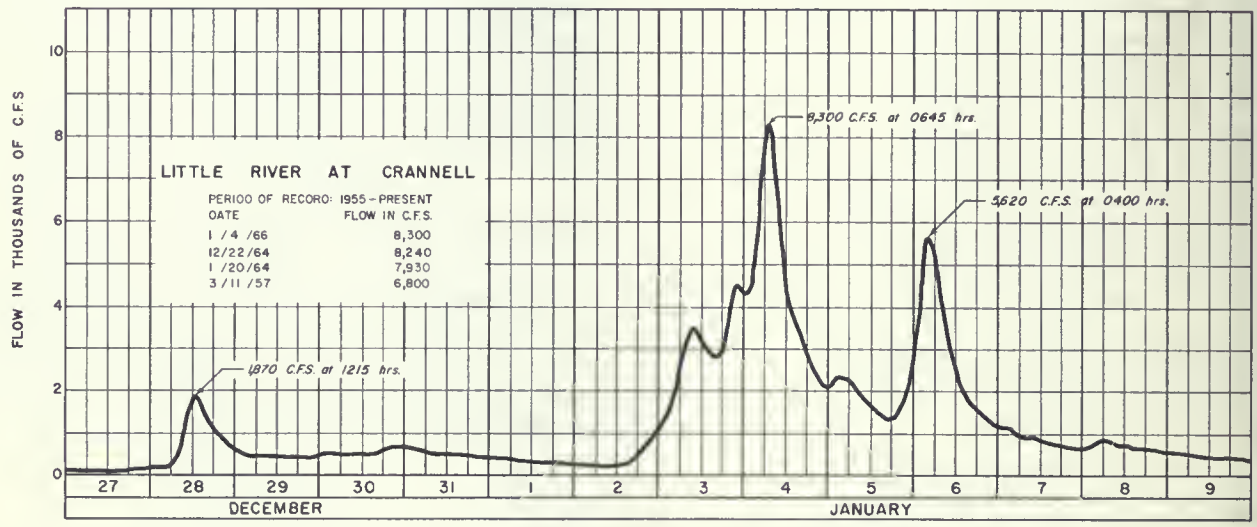
Redwood Creek - Mad River Basins

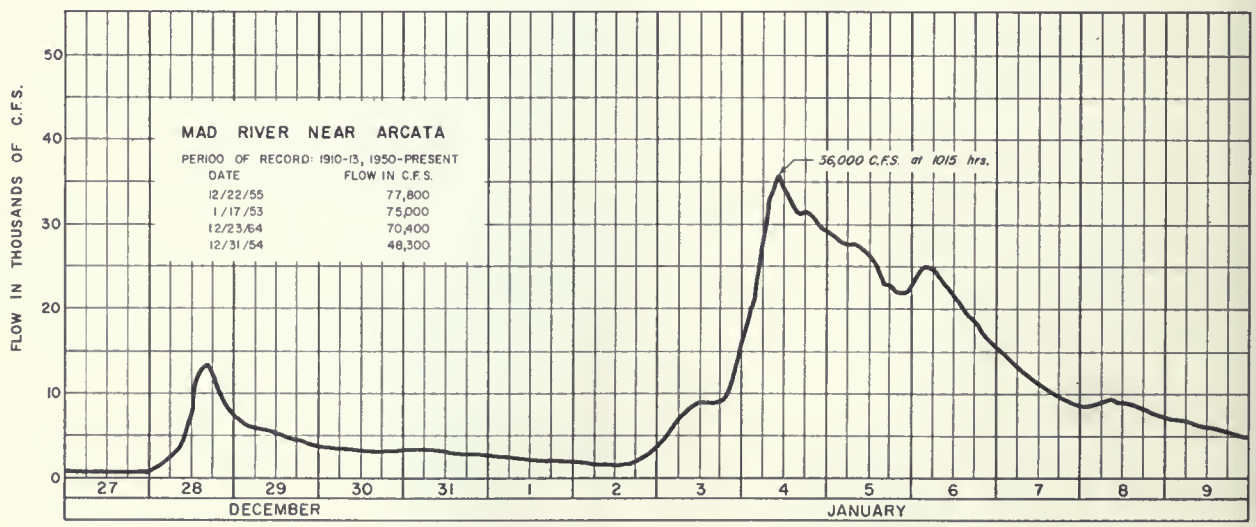
In the Redwood Creek Basin, 6 to 8 inches of rain generated a crest in the creek of 39,600 cfs at Orick -- almost 10,000 cfs less than that of the December 1964 flood. In the Mad River Basin, 9 to 12 inches of rain

Hourly Precipitation Stations

1. Crescent City Maintenance Station
2. Happy Camp Ranger Station
3. Klamath
4. Etna
5. Hoopa
6. Coffee Creek Ranger Station
7. Eureka WB City
8. Kneeland 10 SSE
9. Hyampom
10. Miranda Spengler Ranch
11. Lake Mountain
12. Covelo Eel River Ranger Station
13. Laytonville
14. Fort Bragg
15. Willits Howard Forest Ranger Station
16. Redwood Valley
17. Navarro 1 NW
18. Point Arena
19. The Geysers
20. Venado







HYDROGRAPHS OF SOUTH FORK EEL, LITTLE AND MAD RIVERS

generated a peak flow of about 36,000 cfs in the Mad River. Ruth Reservoir, by storing much of the upstream runoff, lowered downstream flows. Plate 15 presents a hydrograph of flow at the Mad River near Arcata gage.

Klamath-Trinity River Basins

In the Klamath River Basin, moderate rains, falling intermittently between December 24 and January 8, generated low to moderate peak runoff. The heaviest rains, January 3-5, fell west of the Scott River Valley.

In the Scott and Shasta Rivers and along the Klamath River near Seiad Valley, runoff was low. At Orleans, the Klamath River peaked at about 106,000 cfs around noon on January 6. In December 1964, the peak here was 307,000 cfs, the maximum recorded. On January 6, the river peaked near its mouth at 152,000 cfs, well below the previous maximum of 557,000 cfs set in December 1964.

In the Trinity River Basin, the rains also generated low to moderate rises in runoff. At Hoopa gaging station on the Trinity River, flow peaked at a moderate 46,500 cfs on the morning of January 5. The maximum recorded peak flow here was 231,000 cfs in December 1964.

Eel River and Tributary Basins

In the Eel River Basin, moderate rains began on December 24 and continued intermittently for the next several days. At Scotia, the Eel River peaked at 63,200 cfs on the morning of December 29 (Plate 16).

Basin soils approached the saturation point. When heavy rains hit on January 4 and 5, runoff along the Eel River and tributaries became significant. Table 7 reports rainfall totals of this storm.

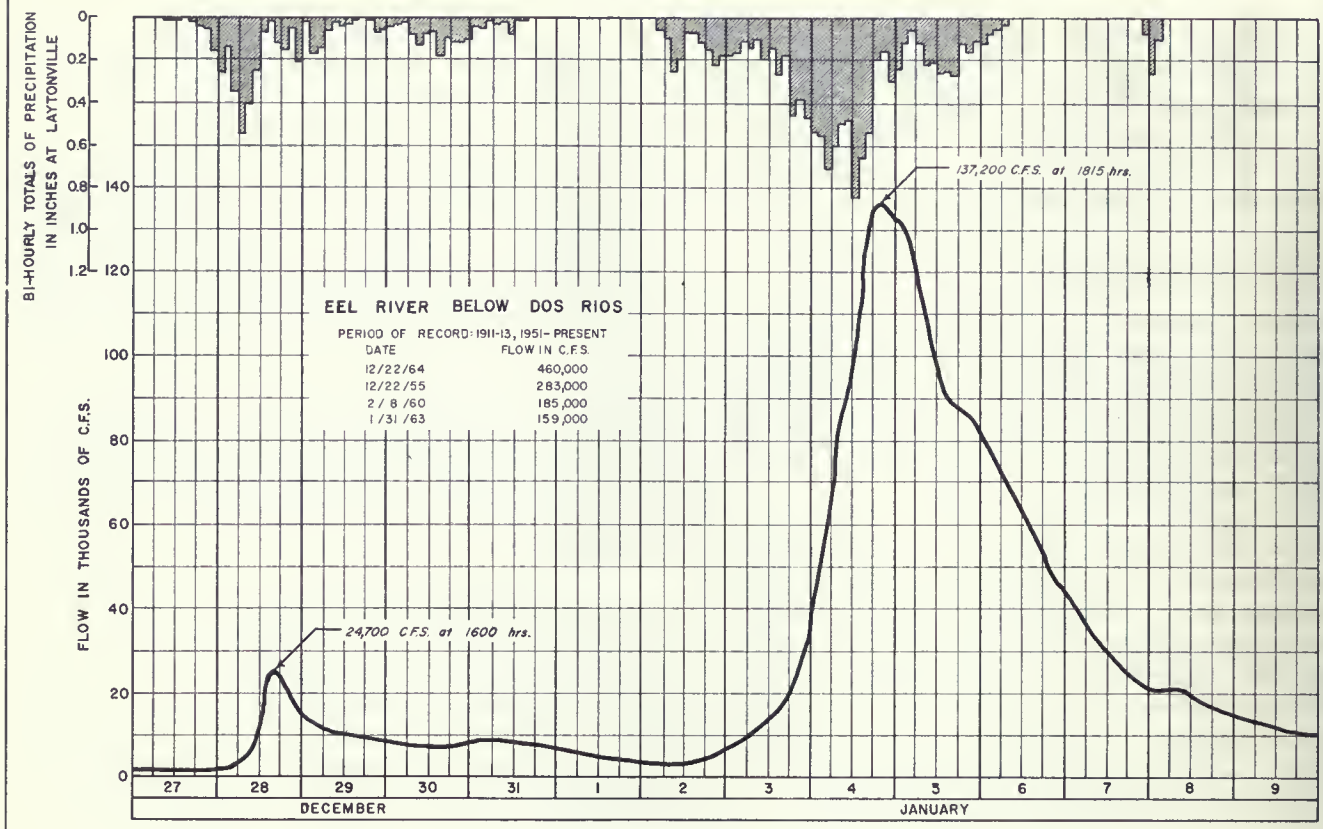
On the evening of January 4, the Eel River below Dos Rios peaked at 137,200 cfs (Plate 16); the maximum flow of record (460,000 cfs) occurred in December, 1964. Around midnight, the river at Fort Sewart peaked at 163,000 cfs, considerably below the record peak of 561,000 cfs in December 1964.

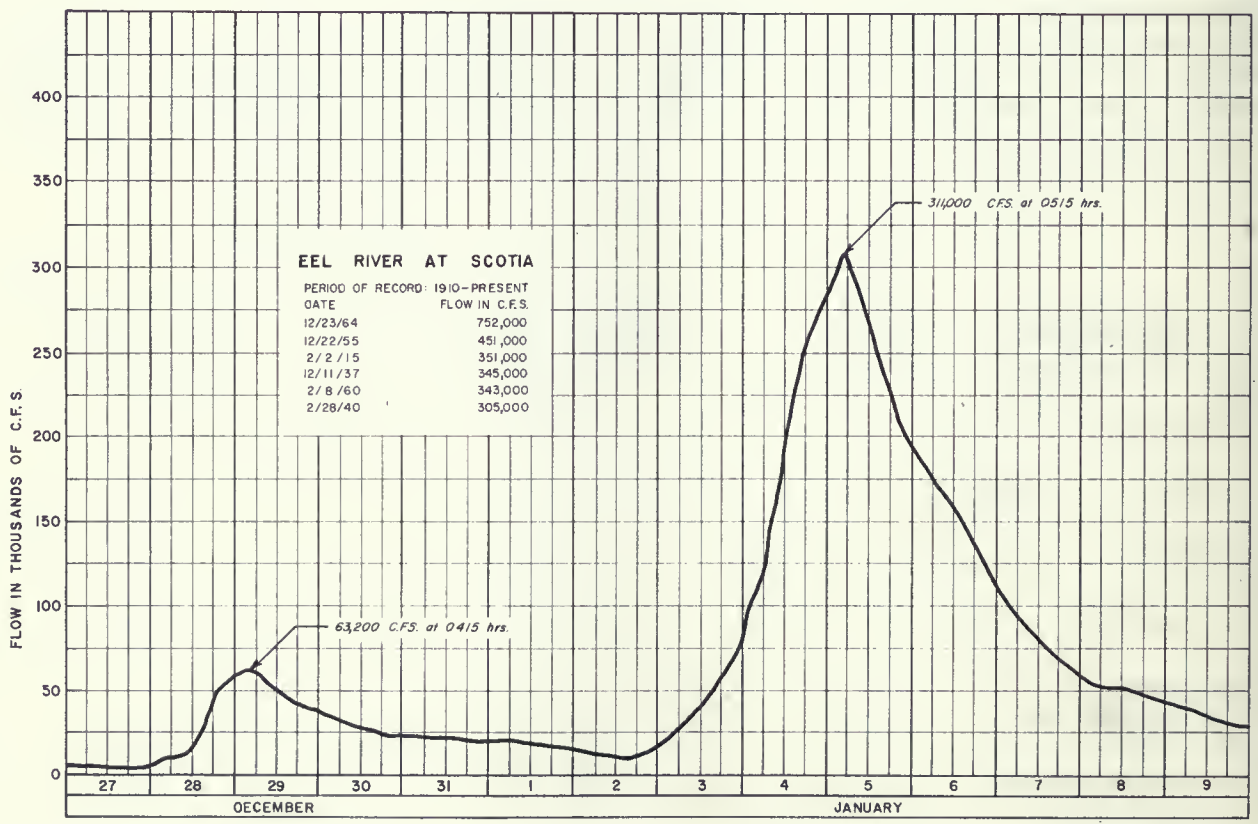
At Miranda, the South Fork Eel River peaked at 106,400 cfs on the night of January 4 (Plate 15): the resulting 33-foot stage was six feet above flood stage. The maximum recorded peak flow

Table 7: Eel River Basin Rainfall: January 1966 Storm

Precipitation Station	Observation Time	14-Day Rainfall Total Dec. 24 - Jan. 6 (Inches)	3-Day Rainfall Total Jan. 3 - 5 (Inches)
Alderpoint	8 a.m.	18.23	10.11
Bridgeville 4NNW	8 a.m.	18.40	7.86
Covelo	8 a.m.	16.02	9.12
Garberville	8 a.m.	20.19	9.12
Miranda Spengler Ranch	12 mid.	18.24	10.11
Standish-Hickey State Park	8 a.m.	26.64	15.33

PLATE 16





HYDROGRAPHS OF EEL RIVER

for this station was 199,000 cfs in December 1964.

The gage at Scotia is located below the confluence of the South Fork Eel with the Eel River. Flow peaked at 311,000 cfs on the morning of January 5 and produced a stage of 45.47 feet. The flood stage at this station is 45.0 feet. The maximum recorded peak flow of 752,000 cfs occurred in December 1964.

The Van Duzen River, fourth major tributary of the Eel, joins the Eel several miles below Scotia. Near Bridgeville, flow peaked at a moderate 17,700 cfs on December 28, and at a relatively high 30,300 cfs on January 4. The maximum peak flow for this station, 48,700 cfs, occurred in December 1964. The combined flows of the Van Duzen and Eel Rivers flooded the low farmlands of the Eel River Delta.

Table 8 reports runoff of the January storm.

Russian River Basin

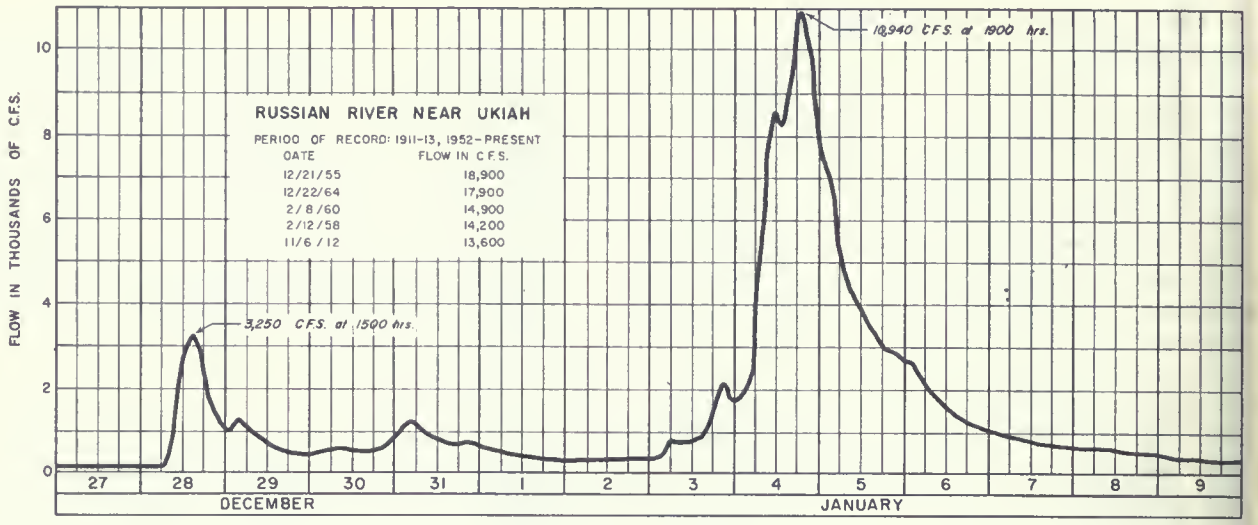
Over the Russian River Basin light rainfall began on January 1, increased slowly through January 3, and tapered off on January 5. Many rain gages in the basin recorded 3 to 7 inches on January 4. Russian River rose slowly at first but then, in response to heavy rainfall on January 4 rose rapidly, peaking at many points on January 5. The peak inflow to Lake Mendocino of about 9,890 cfs on January 4 added about 20,000 acre-feet of water to the lake by January 5. Peak outflow from Coyote Dam during this period was 107 cfs.

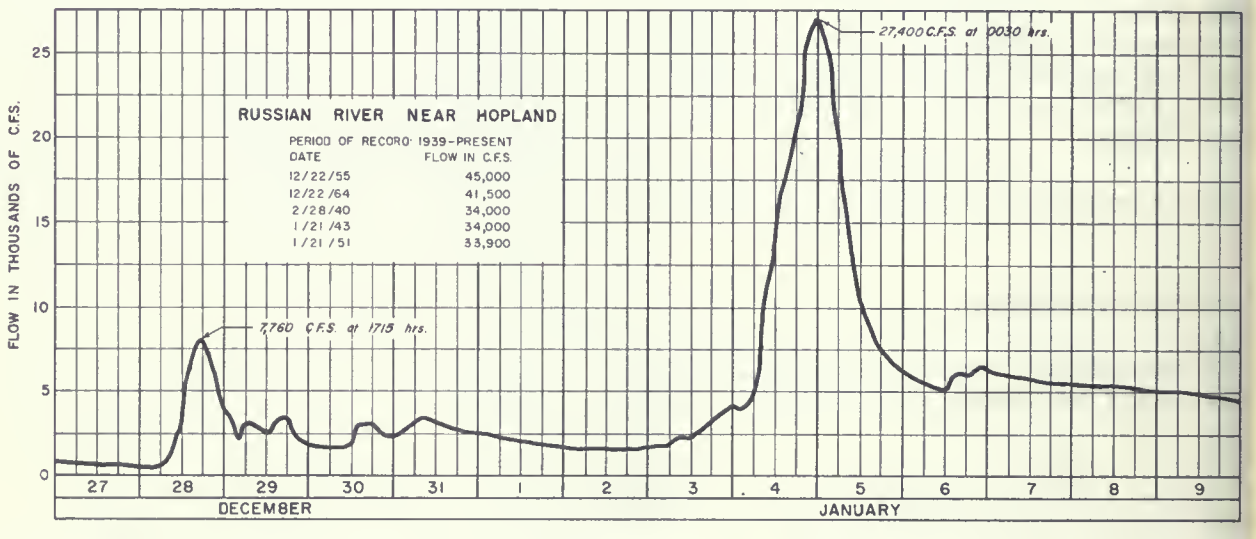
Fifteen miles downstream from Coyote Dam, the Russian River near Hopland peaked at 27,400 cfs (Plate 17). On January 4, just before midnight, it reached a stage of 21.31 feet. Downstream, near Healdsburg, the river reached the 22-foot stage (49,400 cfs) about 9 hours later. At Summerhome, a peak of about 77,000 cfs (45.28 feet) hit between 2 and 4 p.m. on January 5. This flow, the fourth highest since the gaging station was established in 1939, was exceeded only by the floods of 1940, 1955, and 1964. Minor floods affected agricultural bottomland and resort areas.

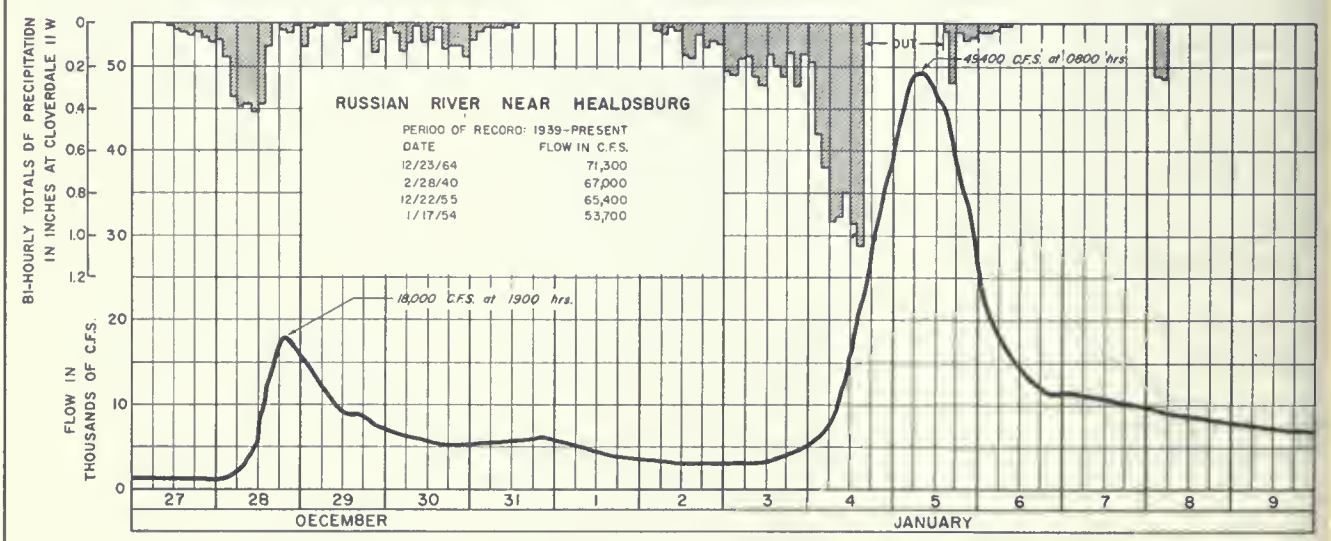
Table 9 reports runoff of the January storm.

Table 8: Eel River Basin Runoff: January 1966 Storm

Stream Gaging Station	Drainage Area (Sq. Mi.)	Peak Stage (Feet)	Peak Discharge (c.f.s.)	Jan. 2-9 Runoff Volume	
				Acre-Feet	Inches
Eel below Dos Rios	1,484	34.47	137,200	678,000	8.58
Eel at Fort Seward	2,079	43.33	163,000	814,000	7.34
Eel near Miranda	537	32.9	106,400	446,000	15.61
Van Duzen near Bridgeville	216	18.2	30,300	--	--
Eel at Scotia	3,113	45.47	311,000	1,633,000	9.85







HYDROGRAPHS OF RUSSIAN RIVER

Table 9: Russian River Basin Runoff: January 1966 Storm

Stream Gaging Station	Drainage Area (Sq. Mi.	Peak Stage (Feet)	Peak Discharge (cfs)	Inches	Acre-Feet	Period Jan.
E. F. Russian River near Calpella	93	13.66	9,890	4.2	20,500	4-5
Russian River near Hopland	362	21.31	27,400	2.9	56,000	4-5
Russian River near Healdsburg	793	22.00	49,400	3.8	162,000	4-6
Russian River near Guerneville (at Summerhome)	1,340	45.28	77,000	5.3	383,000	4-8

Singley Road, west of Fernbridge, in the Eel River Valley (Humboldt Newspapers, Inc.)

PLATE 18


COUNTIES PROCLAIMED MAJOR DISASTER AREAS
IN
NOVEMBER 1965 AND JANUARY 1966
OREGON
NEVADA
ARIZONA
MEXICO
PACIFIC OCEAN
DEL NORTE
HUMBOLDT
SISKIYOU
MODOC
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
LAKE
COLUSA
YUBA
NEVADA
SONOMA
YOLO
PLACER
EL DORADO
NAPA
SACRAMENTO
ALPINE
AMADOR
SOLANO
MARIN
CONTRA COSTA
CALAVERAS
TUOLUMNE
SAN FRANCISCO
ALAMEDA
STANISLAUS
MONO
SAN JOAQUIN
MARIPOSA
SANTA CLARA
MERCED
MADERA
SAN BENITO
FRESNO
INYO
SANTA CRUZ
MONTEREY
KINGS
TULARE
SAN LUIS OBISPO
KERN
SANTA BARBARA
VENTURA
LOS ANGELES
SAN BERNARDINO
ORANGE
RIVERSIDE
SAN DIEGO
IMPERIAL

Flood Damage in Southern California

Widespread flooding occurred in six Southern California counties in November and December 1965. Flood damage was severe in Ventura, Riverside, San Bernardino and San Diego Counties. The Governor proclaimed these counties as disaster areas, and federal funds were made available under the authority of public Law 875 for emergency repair of public facilities.

Flooding also occurred in Los Angeles and Santa Barbara Counties, but to a lesser degree.

As a result of the storms and floods, fourteen people died; damages in the four disaster areas exceeded 13 million dollars; public utility services and highway travel were interrupted for days.

Ventura County

In Ventura County, flooding occurred in the Simi Valley during the first November storm (13-19). The channel of the Douglas Simi Protection District suffered an estimated $100,000 in damages. Silt and debris plugged concrete-lined stretches of Hummingbird Creek and Arroyo Simi in the Santa Susana area and blocked an unlined stretch of Arroyo Simi near Santa Susana Knolls. Scores of families were evacuated as overflow washed into residential areas. Flood waters damaged 63 homes near the channel.

Flooding was not limited to Simi Valley. Floods damaged the channel lining of the Oxnard West, Rice Road, and West Camarillo Hills Drains and the channel of Lang Creek. In all, such damages reached an estimated $120,000.

Floods of the second November storm washed out the Santa Ana Boulevard Bridge as well as several minor bridges across the upper Ventura River. Mud slides and high water forced the closing of State Highway 150 and several other roads. Flood control facilities, quite fortunately, were unharmed.

The late December storm cost two lives. Two Ventura County hydrographers drowned in the Santa Clara River while attempting to measure the record peak flow.

Riverside County

Floods took nine lives in Riverside County. Most November flooding occurred along the Whitewater and Santa Ana Rivers. The Wrightwood area on the north slope of the San Gabriel Mountains suffered minor damage. In December, some of the same areas flooded again.

Heavy flows along the Whitewater River washed out twenty-two county road crossings between Cabazon and Indio. Large volumes of boulders and gravel, swept along by the flow, helped scour and badly damage a 13-mile stretch of channel between Cathedral City and the Salton Sea. The Coachella Valley Water Conservation District estimated the damage at $460,000. South of Thermal, the river flooded about 2,200 acres of producing farmland, eroded fields, and deposited layers of fine mud as it receded. Crops, citrus and date trees suffered extensive damage.

Tahquitz Creek washed out numerous road crossings, damaged bridge abutments of State Highway 111, and isolated Palm Springs from that highway and from State Highway 10. Flood waters swept more than 50 automobiles into the streams and drainage channels of the Tahquitz Creek and Whitewater River Basins.

In Desert Hot Springs, flood waters

Washout Near Rancho Mirage

WHITEWATER RIVER

Vista Chino Road Near Palm Springs

deposited debris and slightly eroded streets but damaged little else in town. West of town, Big and Little Morongo washes eroded banks, washed out the road at dip crossings, damaged a few houses, and swept away several cars.

The swirling Santa Ana River badly damaged bridges and highway crossings. Although moderate damage in Corona in general necessitated only street clean-up, the waters inundated low-lying farmlands near the city and drowned cattle and horses.

In Redlands, dikes, streets, the sewage plant and other public utilities suffered. To the west, Mission Creek overtopped its small channel and flooded farmland and citrus trees. Estimated damage in and near Redlands was $230,000.

East of San Jacinto, the flooding San Jacinto River washed out an uncompleted levee, inundated an uncompleted golf course, and destroyed several pieces of heavy construction equipment. Debris, piled in a dip-crossing, blocked State Highway 79 for about two days. To the northwest, pastures flooded, but not deeply enough to drown cattle. Near Hemet, the river blocked access to some residences. Estimated damage along the river was $180,000.

San Bernardino County

In San Bernardino County, three persons drowned.

In the City of San Bernardino, floods deposited debris in the eroded streets, damaged telephone, electric, gas, and other public utilities and interrupted service.

In Scotland, fifteen miles northwest of San Bernardino, damage to about 40 houses ranged from a few hundred dollars to virtual destruction. Boulders and gravel piled up against the homes and, in some cases, broke walls. Several washouts along Lyle Creek required extensive repairs to the highway.

Along Cucamonga Creek, high-velocity waters damaged roads so badly -- particularly at dip crossings -- that they were closed for weeks afterward.

In Wrightwood, about 25 miles west of San Bernardino, mud and rocks flowed from canyons, overtopped poorly defined channels, piled against houses, damaged streets, covered residential property, and damaged the contents of about 40 homes.

When the high waters of Deep Creek and West Fork Mojave River poured into the Mojave River, the resulting record peak flow forced many persons from their lowland homes. Between Victorville and Barstow the river blocked all bridges and crossings; near Helendale it washed out one bridge and badly eroded the approach to another. Erosion and silt deposition badly damaged farmland. Although the river reached flood stage at Barstow, it did not cause appreciable residential damage.

San Diego County

Damages in San Diego County resulted from floods along the San Diego, Sweetwater, and Tia Juana Rivers and their tributaries.

Forester Creek flooded Santee with 4 to 5 inches of water. Lakeside suffered minor flooding from Coches Creek. Sweetwater River overflow damaged commercial areas and homes. Severe damage in the Midway-Barnett area of San Diego resulted from the flooding of numerous business establishments. Widespread mudslides impaired traffic throughout the city; Highway 101 was closed.

Los Angeles County

In Los Angeles County, debris in Newhall Creek, Sand, Iron, and Wiley Canyons constricted channel inlets; increased velocities damaged improved channel facilities. San Fernando Valley reported damage along Stetson, Hog, and Sombrero Creeks. The Charter Oaks flood channel, under

Starvation Flats (Humboldt Newspapers, Inc.)

construction, suffered damage.

An avalanche of mud blocked a 200-foot stretch of the Pacific Coast Highway for more than 24 hours. Considerable localized flooding occurred within the City and County of Los Angeles; but channels and drains prevented widespread general flooding.

Santa Barbara County

Near Carpinteria, in Santa Barbara County, Franklin Creek overflowed its banks and inundated several homes and a considerable area. In Goleta, San Pedro Creek overtopped and flooded developed areas. In Santa Maria, erosion severly damaged Bradbury Channel.

Flood Damage in North Coastal Hydrographic Area

On January 4, a storm struck hard in Northern California; precipitation was heavy, widespread, and accompanied with gale force winds. The storm hammered coastal areas, blocking rail and highway traffic, closing schools and businesses. Thousands of stranded travelers were housed temporarily in motels, hotels, churches, homes, and public buildings.

Although three to five inches of rain fell in some areas within 24 hours, this depth was well below the 14 inches which fell within the same period during the floods of Christmas, 1964. Furthermore, river flows, creating well below the highest of record, were about one-third to half their 1964 size. Flood damage, nevertheless was considerable.

Humboldt County

Rapidly rising streams inundated the lowlands of Humboldt County. More than 1,000 persons fled Orick and vicinity to escape the rising waters of Redwood Creek. South of Eureka, scores of people moved out or got ready to move because of the high flows in the Eel River.

Along the Van Duzen River, about 180 persons fled Starvation Flats; others refused evacuation and remained in their homes as the water surrounded them. The Governor declared the county a disaster area.

As the storm continued, it isolated the communities of McCann, Shively, Holmes, Ferndale, Hoopa, Weitchpec, Orleans and Willow Creek. The Humboldt County Sheriff's Office reported that at least 1,000 people were so affected. U. S. Highway 101 was closed at Fish Creek north of the Mendocino-Humboldt County line; U. S. Highway 199 was closed 3½ miles north of Patrick's Creek; State Route 299 was closed between Willow Creek and Del Loma; and State Route 96, between Orleans and Happy Camp. At Garcia River about 2 miles north of Point Arena, Elk Creek changed channels and cut through State Route 1, closing it. The highway also was closed from Fernbridge to Ferndale.

The Eel River damaged about 120 farms, depositing debris over 20,000 acres. Of these, 1,100 acres suffered from particularly heavy concentrations.

The county suffered damages estimated at $7 million. Damage to county roads and bridges alone was estimated at $710,000.

Del Norte County

In Del Norte County, the Smith River flooded low lying pastures, isolated other areas, and forced the closing of both U. S. Highway 199 and North Bank Road. Although 200 people living in the area were evacuated to high ground, no houses were inundated.

The Klamath River swept away a temporary bridge on State Route 96, but did little other damage. Cattle were moved to high ground; and no loss of livestock was reported.

Table 10: Flood Damage in Declared Disaster Areas

County		Estimated Damage*
Ventura County		
Public Property		$1,100,000
Public Utilities		100,000
Private Property		420,000
Agricultural		350,000
	Total	$1,970,000
Riverside County		
Public Property		$2,190,000
Public Utilities		100,000
Private Property		430,000
Agricultural		370,000
Railroad		1,070,000
	Total	$4,160,000
San Bernardino County		
Public Property		$4,565,000
Public Utilities		440,000
Private Property		715,000
Agricultural		130,000
Railroad		260,000
	Total	$6,110,000
San Diego County		
Public Property and Miscellaneous		$ 9,000
Public Utilities		202,000
Private Property		561,000
Roads and Drainage Systems		314,000
	Total	$1,086,000
Humboldt County		
Public Property		$4,000,000
Public Utilities		10,000
Private Property		2,040,000
Agricultural Losses		450,000
Railroad		350,000
	Total	$6,850,000

*From U. S. Corps of Engineers, County Disaster offices, local public agencies, and State Department of Water Resources.

Accelerated growth since 1950 has resulted in extensive development of the flood plains of the State. Recurrent floods have subjected these developments to intense damage. Although flood control works have been constructed to protect many areas, local development within the flood plains has increased more rapidly than the installation of protective works.

Recognizing that the State's land resources are a limited, valuable, and irreplaceable resource which must be carefully developed, the State Legislature, at the 1965 regular session, passed the Cobey-Alquist Flood Plain Management Act. This Act declares that the public interest necessitates the prevention of loss of life and of economic loss caused by excessive flooding; that the primary responsibility for establishing and enforcing flood plain regulation rests with local government; that State Policy encourages local government to establish and enforce such needed regulations; and that the State should provide appropriate assistance and guidance.

The importance of the flood problem in California is emphasized by the many flood control facilities and the hundreds of reclamation and flood control districts, federal agencies, and state agencies engaged in flood mitigating programs. Flood experience indicates, however, that additional flood protection must be provided rapidly.

March 1940

July 1963

Accelerated Growth in Los Angeles County

Table 11

Peak Flows and Stages
(Preliminary Data, Subject to Revision)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
North Coastal Area									
Middle Fork Smith River at Gasquet	130	1911-18 1958-	USGS	12/22/64	22.2	41,000	Discontinued		
Smith River near Crescent City	609[r]	1931-	USGS	12/22/64	48.5	228,000	1/ 6/66	38.53	144,500
Shasta River near Yreka	793[r]	1933-41 1944-	USGS	12/22/64	12.92	21,500[c]	1/ 5/66	5.56	1,330
Scott River near Fort Jones	653[r]	1941-	USGS	12/22/64	25.	54,600	1/ 6/66	8.86	4,580
Klamath River near Seiad Valley	6,980	1912-25 1951-	USGS	12/22/64	33.75	165,000[c]	1/ 6/66	11.00	15,000
South Fork Salmon River near Forks of Salmon	252	1957-	USGS	12/22/64	21.73	31,400	Discontinued		
North Fork Salmon River near Forks of Salmon	203[r]	1958-	USGS	12/22/64	28.2[h]	25,100	Discontinued		
Salmon River at Somesbar	746	*1911-	USGS	12/22/64	43.4[h]	133,000	1/ 6/66	13.73	23,600
Klamath River at Orleans	8,480	1927-	USGS	12/22/64	76.5[h]	307,000[c]	1/ 6/66	23.65	106,000
Red Cap Creek near Orleans	56.1	1958-	USGS	12/22/64	-	15,000[e]	Discontinued		
Bluff Creek near Weitchpec	74.6	1958-	USGS	12/22/64	-	27,000	Discontinued		
Trinity River above Coffee Creek, near Trinity Center	149	1957-	USGS	12/22/64	12.30	20,800	3/ 9/66	5.98	2,600
Trinity River at Lewiston	728[r]	1911-	USGS	12/22/55	27.3[h]	71,600	5/10/66	4.66	1,030[c],
North Fork Trinity River at Helena	151	1911-13 1957-	USGS DWR	12/22/64	27.93[h]	35,800	4/ 1/66	12.10	1,850[e]
Trinity River near Burnt Ranch	1,439[r]	1931-40 1956-	USGS	12/22/55	43.2[h]	172,000	1/ 6/66	8.56	5,360
New River at Denny	173	1927-28 1959-	USGS	12/22/64	38.7[h]	60,000[e]	1/ 6/66	15.5	5,700
South Fork Trinity River at Forest Glen	208	1959-	USGS	12/22/64	27.7[h]	41,200	Discontinued		

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
North Coastal Area (Continued)									
South Fork Trinity River near Hyampom	342	1956-	USGS	12/22/64	25.8	57,100[e]	Discontinued		
Hayfork Creek near Hayfork	86.7[r]	1956-	USGS	12/22/64	14.56	7,520	Discontinued		
Hayfork Creek near Hyampom	378[r]	1953-	USGS	12/22/64	19.14	28,800	1/ 4/66	11.75	8,930
South Fork Trinity River near Salyer	898[r]	1911-13 1950-	USGS	12/22/64	47.6	95,400	1/ 5/66	22.5	49,000
Willow Creek near Willow Creek	43.3	1959-	USGS	12/22/64	25.3[h]	17,000[e]	1/ 4/66	10.0	3,100
Trinity River at Hoopa	2,847[r]	*1911-	USGS	12/22/64	40.3	231,000[c]	1/ 5/66	31.33	46,500[c]
Klamath River near Klamath	12,100	*1910-	USGS	12/23/64	55.3	557,000[c]	1/ 6/66	26.14	152,000[c]
Redwood Creek near Blue Lake	67.5	1953-58 1964-	USGS	12/22/64	16.05	16,400			*
Redwood Creek at Orick	278	1911-13 1953-	USGS	12/22/64	24.0	50,500	1/ 4/66	21.82	39,600
Little River at Crannell	44.3	1955-	USGS	1/20/64	11.06	8,240	1/ 4/66	11.12	8,300**
Mad River near Forest Glen	143	1953-	USGS	12/22/55	24.5[h]	39,200	1/ 4/66	10.04	9,500[c]
North Fork Mad R. near Korbel	40.5	1957-	USGS	12/22/64	20.02	15,400	Discontinued		
Mad River near Arcata	484	1910-13 1950-	USGS	12/22/55	27.30[b]	77,800	1/ 4/66	19.40	36,000[c]
Jacoby Creek near Freshwater	6.07	1954-	USGS	12/30/54	7.20	1,670			*
Elk River near Falk	44.2	1957-	USGS	12/22/64	28.09	3,430	1/ 4/66		*
Eel River below Scott Dam, near Potter Valley	290	1922-	USGS	12/22/64	24.24[h]	56,300[h]	1/ 5/66	16.36	18,400[c]
Eel River at Van Arsdale Dam, near Potter Valley	349	*1909-	USGS	12/22/64	33.9[h]	64,100[c]	1/ 5/66	20.72	20,500[c]
Outlet Creek near Longvale	161[r]	1956-	USGS	12/22/64	30.6[h]	77,900	1/ 4/66	18.99	28,900
Eel River above Dos Rios	705	1950-	USGS	12/22/64	55.4[h]	184,000[c]	Discontinued		
Black Butte River near Covelo	162	*1951-	USGS	12/22/64	26.4[h]	29,000	1/ 4/66	16.12	11,700

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
North Coastal Area (Continued)									
M. F. Eel River below Black Butte River near Covelo	367	1951-	USGS	12/22/64	31.7[h]	133,000	1/ 4/66	16.2	36,300
Eel River below Dos Rios	1,484	1911-13 1951-	USGS	12/22/64	62.5[h]	460,000[c]	1/ 4/66	34.47	137.200[c]
North Fork Eel River near Mina	250	1953-	USGS	12/22/64	33.6[h]	133,000	1/ 4/66	25.39	51,700
Eel River at Fort Seward	2,079	1955-	USGS	12/22/64	87.2[h]	561,000[c]	1/ 4/66	43.33	163,000[c]
South Fork Eel R. nr. Branscomb	43.9	1946-	USGS	12/22/55	16.20	20,100	1/ 4/66	14.68	16,400
Tenmile Creek near Laytonville	50.3	1957-	USGS	12/22/55	22.9[h]	16,300	1/ 4/66	15.26	8,160
South Fork Eel River near Miranda	537	1939-	USGS	12/22/64	46.0[h]	199,000	1/ 4/66	32.92	106,400
Bull Creek near Weott	28.1	1960-	USGS	12/22/64	20.6[h]	6,520			*
Larabee Creek near Holmes	84.1	1959-	USGS	12/22/64	13.05	11,400	Discontinued		
Eel River at Scotia	3,113	*1910-	USGS	12/23/64	72.0[h]	752,000[c]	1/ 5/66	45.47	311,000
South Fork Van Duzen River nr. Bridgeville	36.2	*1951-	USGS	12/22/64	18.70	13,600	1/ 4/66	13.99	7,190
Van Duzen River near Bridgeville	216	1950-	USGS	12/22/64	22.6	48,700	1/ 5/66	18.2	30,300
Mattole River near Petrolia	240	*1911-	USGS	12/22/55	29.60	90,400	1/ 4/66	24.48	56,900
Noyo River near Fort Bragg	106	1951-	USGS	12/22/64	26.30	24,000	1/ 5/66	24.72	19,300
Rancheria Creek near Boonville	65.6	1959-	USGS	12/22/64	20.52	20,000	1/ 4/66	16.08	10,300
Navarro River near Navarro	303	1950-	USGS	12/22/55	40.60	64,500	1/ 4/66	34.34	33,100
South Fork Gualala River near Annapolis	161	1950-	USGS	12/22/55	24.57	55,000	1/ 4/66	24.09	47,800
Russian River near Ukiah	99.7	*1911-	USGS	12/21/55	21.0	18,900	1/ 4/66	14.20	10,940
East Fork Russian River near Calpella	93.0	1941-	USGS	12/22/64	20.21	18,700[c]	1/ 4/66	13.66	9,890[c]

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
North Coastal Area (Continued)									
Russian River near Hopland	362	1939-	USGS	12/22/55	27.00	45,000	1/ 5/66	21.31	27,400[c]
Feliz Creek near Hopland	31.1	1958-	USGS	12/22/64	14.10	6,080	1/ 4/66	11.74	4,190
Russian River near Cloverdale	502	1951-	USGS	12/22/64	31.60	55,200[c]	1/ 5/66	24.37	32,600[c]
Big Sulphur Creek near Cloverdale	82.3	1957-	USGS	12/22/55	22.2[h]	20,000	1/ 4/66	12.96	11,100
Russian River near Healdsburg	793	1939-	USGS	12/23/64	27.00	71,300[c]	1/ 5/66	22.00	49,400[c]
Dry Creek near Cloverdale	87.8	1941-	USGS	12/22/64	18.09	18,100	1/ 4/66	13.54	10,700
Dry Creek near Geyserville	162	1959-	USGS	1/31/63	17.50	32,400	1/ 4/66	14.95	19,800
Santa Rosa Creek near Santa Rosa	12.5	1959-	USGS	2/ 8/60	13.35	3,200	1/ 5/66	10.39	1,590
Russian River near Guerneville (Summerhome)	1,340	*1939-	USGS	12/23/64	49.6	93,400[c]	1/ 5/66	45.28	77,000[c]
Austin Creek near Cazadero	63.1	1959-	USGS	2/13/62	20.6[j]	15,100	1/ 4/66	18.00	14,000
San Francisco Bay Area									
Walker Creek near Tomales	37.1	1959-	USGS	1/ 5/65	19.86	4,340	1/ 5/66	22.23	5,420**
Corte Madera Creek at Ross	18.1	1951-	USGS	12/22/55	17.45	3,620	1/ 5/66	16.62	2,880[c]
Novato Creek near Novato	17.5	1946-	USGS	1/20/64	8.74	1,330	1/ 4/66	4.80	549[c]
Sonoma Creek at Boyes Hot Springs	62.2	1955-	USGS	12/22/55	17.10	8,880	1/ 5/66	13.60	6,430
Napa River near St. Helena	81.4[r]	*1929-	USGS	12/22/55	16.17	12,600	1/ 5/66	13.13	9,190
Dry Creek near Napa	17.4	1951-	USGS	2/24/58	8.11	3,460	1/ 5/66	5.52	1,090
Napa River near Napa	218	*1929-	USGS	1/31/63	27.59	16,900	1/ 5/66	21.22	10,400[c]
Redwood Creek near Napa	9.81	1958-	USGS	1/ 5/65	10.44	1,450	1/ 5/66	9.50	1,250

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
San Francisco Bay Area (Continued)									
San Ramon Creek at San Ramon	5.89	1952-	USGS	10/13/62	16.98	1,600	12/29/65	2.97	92
San Ramon Creek at Walnut Creek	50.8	1952-	USGS	1/31/63	14.40	7,980	12/28/65	5.16	814
Walnut Creek at Walnut Creek	79.2	1952-	USGS	4/ 2/58	20.2	12,200	12/28/65	4.81	1,410 [c]
San Lorenzo Creek at Hayward	37.5	*1939-	USGS	10/13/62	19.73[h]	7,460	12/29/65	7.01	252[c]
Arroyo Mocho near Pleasanton	143	1962-	USGS	2/ 1/63	8.60	1,760	12/29/65	3.51	164
Arroyo Valle near Livermore	147	*1912-	USGS	12/23/55	13.93[h]	18,200	12/29/65	4.04	370
Arroyo Valle at Pleasanton	171	1957-	USGS	3/ 2/48	25.36	11,300	12/31/65	8.19	416
Alameda Creek near Niles	633	1891-	USGS	12/23/55	14.9	29,000[c]	12/29/65	4.72	756[c]
Patterson Creek at Union City	-	1958-	USGS	2/ 1/63	20.4[h]	10,500[c]	12/29/65	9.54	739[c]
Alameda Creek at Union City	653	1958-	USGS	2/ 1/63	19.25[h]	1,770[c]	11/24/65	11.46	233[c]
Coyote Creek near Madrone	196	*1902-	USGS	3/ 7/11	-	25,000	5/2-4/66	2.57[c]	110[c]
Upper Penitencia Creek at San Jose	21.5	1961-	USGS	3/28/63	3.53	295	12/28/65	4.00	80[c]
Alamitos Creek near New Almaden	31.9	1958-	USGS	4/ 2/58	9.67	4,300[c]	12/28/65	3.98	372[c]
Los Gatos Creek at Los Gatos	38.6	*1929-	USGS	2/27/40	14.71[b]	7,110	1/16/66	4.81	96[c]
Guadalupe River at San Jose	146	1929-	USGS	4/ 2/58	16.55	9,150[c]	12/28/65	4.31	1,380[c]
Saratoga Creek at Saratoga	9.22	1933-	USGS	12/22/55	6.40	2,730	12/28/65	2.98	152[c]
Matadero Creek at Palo Alto	7.24	1952-	USGS	12/22/55	9.60[b]	854	12/28/65	2.71	311
San Francisquito Creek at Stanford University	37.5	*1930-	USGS	12/22/55	13.60	5,560	12/28/65	4.80	880[c]
Redwood Creek at Redwood City	1.82	1959-	USGS	1/31/63	9.36	644	12/28/65	5.39	224
Pescadero Creek near Pescadero	45.9	1951-	USGS	12/23/55	21.27	9,420	12/28/65	6.66	626

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Central Coastal Area									
San Lorenzo River at Big Trees	111	1936-	USGS	12/23/55	22.55	30,400	12/29/65	4.80	1,080[c]
Branciforte Creek at Santa Cruz	17.3	1940-43 1952-	USGS	12/22/55	22.04	8,100	12/29/65	6.19	277
Soquel Creek at Soquel	40.2	1951-	USGS	12/23/55	22.33	15,800	12/25/65	6.15	805
Llagas Creek near Morgan Hill	19.6	1951-	USGS	4/ 2/58	8.45	3,190[c]	Regulated	No Peaks	
Bodfish Creek near Gilroy	7.40	1959-	USGS	1/31/63	8.25	1,240	12/28/65	4.21	130
Tres Pinos Creek near Tres Pinos	206	1939-	USGS	4/ 4/41	7.75	8,060	12/31/65	5.40	1,350
San Benito River near Hollister	586	1949-	USGS	4/ 3/58	16.30	11,600	1/ 1/66	5.47	912[c]
Pajaro River at Chittenden	1,186	1939-	USGS	12/24/55	32.46	24,000[c]	12/31/65	8.94	1,320[c]
Corralitos Creek near Corralitos	10.6	1957-	USGS	4/ 2/58	7.55	1,970	12/28/65	4.08	366
Corralitos Creek at Freedom	27.8	1956-	USGS	12/22/55	15.6[h]	3,620	12/25/65	4.09	224
Salinas River near Pozo	74.1	1942-	USGS	1/21/43	13.35	7,210	11/24/65	7.68	1,320
Salinas River above Pilitas Creek near Santa Margarita	114	1942-	USGS	4/ 3/58	8.68	4,720[c]	Regulated	No Peaks	
Jack Creek near Templeton	25.3	1949-	USGS	1/25/56	9.56	5,040	12/29/65	4.93	580
Salinas River at Paso Robles	389	1939-	USGS	3/ 9/43	16.2[b]	14,200[c]	Discontinued		
Estrella River near Estrella	924[r]	1954-	USGS	4/ 6/58	7.20	8,850	12/31/65	2.88	308
Nacimiento River near Bryson	140	1955-	USGS	12/23/55	24.63	30,300	12/28/65	10.94	6,200
San Antonio River at Pleyto	284	*1922-	USGS	4/ 3/58	6.44	19,100	Discontinued		
Salinas River near Bradley	2,536[r]	1948-	USGS	4/ 3/58	12.53	28,400[c]	1/ 1/66	5.63	1,010[c]
Arroyo Seco near Soledad	244	1901-	USGS	4/ 3/58	16.40	28,300	12/28/65	10.19	4,530

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Central Coastal Area (Continued)									
Salinas River near Spreckels	4,157[r]	*1900-	USGS	2/12/38 1/16/52	25.0 26.85	75,000[c] -	1/ 2/66	11.87	654[c]
Big Sur River near Big Sur	46.5	1950-	USGS	4/ 2/58	11.56	5,680	11/17/65	5.73	918
Arroyo de la Cruz near San Simeon	41.4	1950-	USGS	12/23/55	12.40	17,700	1/29/66	8.42	5,420
Santa Rosa Creek near Cambria	12.5	1957-	USGS	2/ 1/60 12/ ?/55	10.36 15.2[h]	2,520 -	11/18/65	5.77	628
Arroyo Grande at Arroyo Grande	102	1939-	USGS	1/15/52	11.97	5,370	11/23/65	3.20	220
Sisquoc River near Garey	472	1940-	USGS	1/23/43	8.46[b]	13,000	12/29/65	6.10	2,220
Santa Maria River at Guadalupe	1,742	1940-	USGS	1/16/52	8.18[b]	32,800	12/30/65	5.38	1,360
Santa Ynez River below Gibraltar Dam, near Santa Barbara	216	1920-	USGS	3/ 2/38	-	35,500[c]	12/29/65	16.20	6,600[c]
Santa Cruz Creek near Santa Ynez	73.9	1941-	USGS	2/ 9/62	9.75	4,520	12/29/65	7.80	2,030
San Jose Creek near Goleta	5.51	1941-	USGS	4/ 4/41	-	1,960	11/16/65	9.32	1,700
Atascadero Creek near Goleta	18.8[r]	1941-	USGS	1/15/52	10.85	4,500	11/16/65	12.78	4,600**
Carpinteria Creek near Carpinteria	13.1	1941-	USGS	1/15/52	9.75	2,440	11/24/65	7.90	2,300
South Coastal Area									
Matilija Creek above res. near Matilija Hot Springs	50.7	1948-	USGS	1/15/52	12.1	8,800	11/16/65 12/29/65	8.00 9.89	5,400 5,540
Matilija Creek at Matilija Hot Springs	54.6	1927-	USGS	3/ 2/38	-	15,900	11/24/65 12/29/65	6.85 9.89	2,620[c] 5,500[c]
North Fork Matilija Creek at Matilija Hot Springs	15.6	1928-32 1939-	USGS	3/ 2/38	-	5,580	11/24/65 12/29/65	7.37 5.57	1,570 1,570
Ventura River near Meiners Oaks	76.4	1959-	USGS	2/10/62	7.1	7,590[c]	11/24/65 12/29/65	5.90 *	4,420[c] 7,910[c]**
San Antonio Creek at Casitas Springs	51.2	1949-	USGS	4/ 3/58	12.80	5,240	11/24/65 12/29/65	10.84 9.30	2,750 2,100
Coyote Creek near Oak View	13.2	1958-	USGS	2/ 9/62	7.45	1,700	11/24/65 12/29/65	9.10 7.03	4,410** 1,780

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg in cfs	Date	Stage in ft.	Dischg. in cfs
South Coastal Area (Continued)									
Santa Ana Creek near Oak View	9.11	1958-	USGS	2/ 9/62	6.77	2,200	11/24/65 12/29/65	8.10 6.35	2,670** 1,400
Ventura River near Ventura	188	1911-14 1929-	USGS	3/ 2/38	19.2	39,200	11/24/65 12/29/65	16.75 16.55	11,200[c] 10,700[c]
Santa Clara River at Los Angeles-Ventura County Line	644	1952-	USGS	2/11/62 3/ 2/38	9.65 -	9,100 24,000[b]	11/24/65 12/29/65	10.73 11.50	12,200 34,100**
Piru Creek above Lake Piru	372	1955-	USGS	2/10/62 3/ 2/38	12.20 -	12,200 35,000[b]	11/24/65 12/29/65	9.80 9.75	8,400 8,300
Hopper Creek near Piru	23.6	*1930-	USGS	3/ 2/38	-	8,000	11/24/65 12/29/65	6.28 6.43	2,690 3,000
Sespe Creek near Wheeler Springs	49.5	1948-	USGS	2/10/62	10.6[h]	3,800	11/24/65 12/29/65	9.10 9.42	2,940 3,320
Sespe Creek near Fillmore	251	1911-13 1927-	USGS	3/ 2/38	-	56,000	11/24/65 12/29/65	13.40 13.95	19,600 21,600
Santa Paula Creek near Santa Paula	40.0	1927-	USGS	3/ 2/38	10.56	13,500	11/22/65 12/29/65	7.49 7.28	6,480 6,060
Malibu Creek at Crater Camp near Calabasas	105	1931-	USGS	3/15/52	16.8	13,600	11/22/65 12/29/65	- -	4,180 20,600**
Ballona Creek near Culver City	89.5[r]	1928-	USGS	3/ 2/38	15.4	19,000	11/22/65 12/29/65	- -	17,000 10,300
Los Angeles River at Sepulveda Dam	158	1929-	USGS	3/ 2/38	-	12,000[e]	11/17/65 12/29/65	9.90 10.90	11,250[c] 13,000[c]**
Pacoima Creek near San Fernando	28.5	1916-	USGS	3/ 3/38 2/ -/14	-	2,440[c] 5,400	11/23/65 12/29/65	- -	664[c] 152[c]
Tujunga Creek near Sunland	106	1916-	USGS	3/ 2/38	-	50,000[e]	11/22/65 12/29/65	- -	6,000[c] 3,600[c]
Tujunga Creek below Hansen Dam	150	1933-38 1941-	USGS	3/ 2/38	-	54,000[e]	11/23/65 12/31/65	3.93 2.18	3,240[c] 840[c]
Los Angeles River at Los Angeles	514	1929-	USGS	3/ 2/38	-	67,000[c]	11/17/65	-	24,400[c] 32,000[c]
Arroyo Seco near Pasadena	16.0	1910-	USGS	3/ 2/38	9.42	8,620	11/22/65 12/29/65	6.33 6.06	3,160 3,050
Los Angeles River near Downey	599	1928-	USGS	3/ 2/38	-	79,700	11/22/65 12/29/65	- -	22,600[c] 39,200[c]

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
South Coastal Area (Continued)									
Rio Hondo above Whittier Narrows Dam	91.2	1956-	USGS	1/ 6/59	4.90[h]	8,150[c]	11/22/65 12/29/65	4.03 4.38	5,860[c] 6,640[c]
Rio Hondo near Montebello	116	1928-	USGS	3/ 2/38	16.69	28,000[c]	11/22/65 12/29/65	- -	7,500[c] 7,100[c]
Rio Hondo near Downey	143	1928-	USGS	3/ 2/38	12.0	24,400[c]	11/24/65 12/29/65	- -	11,500[c] 19,800[c]
Los Angeles River at Long Beach	832	1928-	USGS	3/ 2/38	-	99,000[c]	11/22/65 12/29/65	- -	44,700[c] 61,000[c]
East Fork San Gabriel River near Camp Bonita	84.6[r]	1932-	USGS	3/ 2/38	-	46,000	11/22/65 12/29/65	- -	8,200 9,760
West Fork San Gabriel River at Camp Rincon	104[r]	1927-	USGS	3/ 2/38	-	34,000	11/22/65 12/29/65	- -	9,030 12,800
San Gabriel River near Azusa	214[r]	1895-	USGS	3/ 2/38	-	65,700[c]	11/23/65 12/29/65	11.78 8.20	9,360[c] 3,020[c]
San Gabriel River below Santa Fe Dam near Baldwin Park	236[r]	1942-	USGS	1/23/43	-	8,000[c]	11/23/65 12/31/65	17.14 12.35	11,100[c]** 1,430[c]
San Gabriel River above Whittier Narrows Dam	353	1955-57 1963-	USGS	1/26/56	8.16[h]	12,000[c]	11/24/65 12/29/65		11,000[c] 11,200[c]
San Jose Creek near El Monte	87.8	1965-	USGS	-	-	-	11/22/65 12/29/65	- -	3,080 5,200**
San Gabriel River at Pico	448[r]	1928-	USGS	3/ 2/38	-	22,700[c]	11/22/65 12/29/65	- -	352[c] 700[c]
San Gabriel River at Spring Street near Los Alamitos	472[r]	1927-51 1952-	USGS	3/ 2/38	-	27,000[cb]	11/23/65 12/29/65	- -	1,220[c] 1,740[c]
Brea Creek below Brea Dam, near Fullerton	21.5[r]	1942-	USGS	2/29/44	5.10	655[c]	11/22/65 12/29/65	5.05 4.82	327[c] 400[c]
Coyote Creek at Los Alamitos	-	1963-	USGS	11/15/63	-	-	11/22/65 12/29/65	- -	5,000 3,740
Santa Ana River near Mentone	209[r]	1896-	USGS	3/ 2/38	14.3	52,300	11/22/65 12/29/65	14.4	8,000[e] -
Mill Creek near Yucaipa	38.1	1919-38 1947-	USGS	3/ 2/38	-	18,100	11/22/65 12/29/65	14.35 17.70	10,000 -
Plunge Creek near East Highlands	17.1	1919-	USGS	3/ 2/38	-	5,340	11/22/65 12/29/65	6.07 2.53	4,200 1,090

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
South Coastal Area (Continued)									
City Creek near Highland	19.5	1919-	USGS	3/ 2/38	-	6,900	11/22/65 12/29/65	5.86 5.59	1,310 1,120
Santa Ana River at Waterman Ave. at San Bernardino	332[r]	1954-	USGS	3/ 2/38	-	75,700	11/22/65 12/29/65	7.94 3.40	10,400 3,100
San Timoteo Creek near Redlands	119	1926-	USGS	3/ 2/38	-	7,460	11/22/65 12/29/65	4.22 2.87	1,360 500
Warm Creek Floodway near San Bernardino	69.5	1961-	USGS	9/18/63	2.75	1,440	11/23/65 12/29/65	3.10 2.86	2,310** 1,710
Warm Creek near San Bernardino	84.5	1964-	USGS	3/22/64	5.82	732	11/22/65 12/29/65	6.33 5.22	606 295
Lytle Creek near Fontana	46.3	1918-	USGS	3/ 2/38	-	25,200	11/22/65 12/29/65	10.78 -	9,000 -
Cajon Creek near Keenbrook	40.6	1919-	USGS	3/ 2/38	19.3	14,500	11/22/65 12/29/65	9.40 16.00	3,160 12,700
Lone Pine Creek near Keenbrook	15.1	1919-38 1949-	USGS	3/ 2/38	-	6,180	11/22/65 12/29/65	6.69 9.07	980 1,900[k]
Lytle Creek at Colton	180	1957-	USGS	3/ 2/38	-	21,500	11/22/65 12/29/65	6.16 12.40	5,300 14,800
Santa Ana River at Colton	722	1961-	USGS	9/18/63	10.03	1,950	11/22/65 12/29/65	- 10.37	25,000** 17,500
Santa Ana River at Riverside Narrows near Arlington	851[r]	1927-	USGS	3/ 2/38	-	100,000	11/23/65 12/29/65	13.52 11.2	20,000[e] 15,000[e]
San Jacinto River near San Jacinto	141	1920-	USGS	2/16/27	-	45,000	11/22/65 12/29/65	10.4 6.05	6,300 890
Bautista Creek near Hemet	39.4	1947-	USGS	4/ 3/58	4.65	1,440	11/23/65	4.80	1,640**
San Jacinto River near Elsinore	728[r]	1916-	USGS	2/17/27	11.8	16,000	11/22/65 12/29/65	- 2.26	0[c] 0.8[c]
Temescal Creek near Corona	164	1927-	USGS	3/ 2/38	-	14,900[c]	11/22/65 12/29/65	8.07 8.66	- -
San Antonio Creek near Claremont	16.5	1917-	USGS	3/ 2/38	-	21,400	11/22/65 12/29/65	6.08 6.46	2,300 2,590
Cucamonga Creek near Upland	10.1	1927-	USGS	3/ 2/38	-	10,300	11/22/65 12/29/65	6.22 5.28	1,900 1,130

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
South Coastal Area (Continued)									
Santa Ana River below Prado Dam	1,486	1930-	USGS	3/ 2/38	-	100,000	11/28-30/65 12/30/65	4.08 4.16	1,040[c] 1,240[c]
Carbon Creek below Carbon Canyon Dam	19.4	1961-	USGS	2/13/62	0.89	81[c]	12/ 1/65 1/ 3/65	1.17 1.14	220[c]** 195[c]
Santiago Creek at Modjeska	12.5	1961-	USGS	2/11/62	3.53	302	11/22/65 12/29/65	6.60 5.80	1,500** 1,120
Santiago Creek at Santa Ana	95.0	1928-	USGS	3/ 2/38	8.36	4,400[c]	11/22/65 12/29/65	3.73 4.50	255[c] 590[c]
Santa Ana River at Santa Ana	1,685	1923-	USGS	2/ 3/38	-	46,300[c]	11/24/65 12/30/65	5.77 4.00	3,300[s] 1,400[s]
San Diego Creek near Irvine	40.3	1949-	USGS	1/18/52	7.70	4,040	11/22/65 12/29/65	4.88 6.15	1,440 2,550
San Juan Creek near San Juan Capistrano	106	1928-	USGS	3/ 2/38	-	13,000	11/22/65 12/29/65	6.60 4.20	4,080 1,950
San Mateo Creek near San Clemente	80.8	1952-	USGS	4/ 1/58	9.10	4,800	11/22/65 12/29/65	10.14 9.24	5,070** 3,460
Cristianitos Creek near San Clemente	29.0	1950-	USGS	1/16/52	8.86	1,800	11/22/65 12/29/65	7.50 6.20	1,060 450
San Mateo Creek at San Onofre	132	1946-	USGS	4/ 1/58	5.62	4,650	11/22/65 12/29/65	8.13 6.22	5,500[s]** 3,840[s]
San Onofre Creek near San Onofre	34.6	1950-	USGS	4/ 1/58	5.90	2,680	11/22/65 12/29/65	5.55 4.20	1,310 790
San Onofre Creek at San Onofre	42.2	1946-	USGS	4/ 1/58	6.90	2,600	11/22/65 12/29/65	7.83 9.14	1,500 2,410[s]
Temecula Creek near Aguanga	131	1957-	USGS	4/ 3/58	6.57	3,540	11/22/65 12/29/65	6.37 2.80	3,200 295
Murrieta Creek at Temecula	222	1924-	USGS	1/23/43	13.82	17,500	11/23/65 12/29/65	6.87 7.84	3,700 5,020
Santa Margarita River near Temecula	588	1923-	USGS	2/16/27	14.6	25,000	11/23/65 12/29/65	7.61 8.00	4,200[c] 5,520[c]
Santa Margarita River near Fallbrook	644	1924-	USGS	2/16/27	15.6[b]	33,100	11/23/65 12/30/65	8.87 8.15	4,750[c] 3,710[c]
De Luz Creek near Fallbrook	47.5	1957-	USGS	4/ 1/58	9.95[h]	2,800	11/22/65 12/29/65	9.10 7.94	1,930 1,030

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
South Coastal Area (Continued)									
Santa Margarita River at Ysidora	739	1923-	USGS	2/16/27	18.00[b]	33,600	11/23/65 12/30/65	12.25 11.98	8,400[c] 7,320[c]
Agua Caliente Creek near Warner Springs	19.0	1961-	USGS	3/ 6/62	3.76	88	11/23/65	6.10	740**
W. Fork San Luis Rey River near Warner Springs	25.5	1913-15 1956-	USGS	3/16/58	10.77	2,060	11/22/65 12/29/65	10.25 7.13	1,650 355
Pauma Creek near Pauma Valley	11.0	1965-	USGS	-	-	-	11/23/65 12/29/65	6.12 3.62	620** 74
San Luis Rey River at Monserate Narrows, near Pala	373	1935-41 1946-	USGS	2/ 7/37 4/ 3/58	8.7[b] -	- 1,990[c]	11/22/65 12/30/65	4.80 2.41	2,850[c]** 117[c]
San Luis Rey River near Bonsall	512	1916-18 1929-	USGS	3/ 2/38 2/1891	12.60[b] -	18,100[c] 128,000	11/23/65 12/30/65	9.63 5.11	2,560[c] 86[c]
San Luis Rey River at Oceanside	577	*1912-	USGS	1/27/16	-	95,600	11/23/65 12/31/65	13.31 10.02	624[c] 6.9[c]
Santa Ysabel Creek near Ramona	112	1912-23 1943-	USGS	1/27/16	14.0[b]	28,400	11/23/65 12/30/65	11.5 3.87	4,570[c] 252[c]
Santa Ysabel Creek near San Pasqual	128	*1905-	USGS	3/24/06	6.3[b,m]	8,000	11/25/65 12/30/65	10.98 3.34	5,260[c] 284[c]
Guejito Creek near San Pasqual	22.5	1946-	USGS	4/ 3/58	5.83	1,660	11/23/65 12/30/65	7.45 2.95	2,550** 111
Santa Maria Creek near Ramona	57.6	1912-20 1946-	USGS	1/27/16	14.1[h]	7,140	11/23/65 12/30/65	4.56 2.54	1,170 65
San Dieguito River near San Pasqual	249	1956-	USGS	4/ 3/58	7.35	3,600[c]	11/23/65 12/30/65	7.40 5.23	4,160[c]** 987
Los Penasquitos Creek near Poway	42.1	1965-	USGS	-	-	-	11/23/65 12/29/65	7.40 -	1,610 1,780**
San Diego River near Santee	377	1912-	USGS	1/27/16	25.1[b]	70,200	11/23/65 12/29/65	7.55 6.70	1,300[c] 1,280[c]
Sweetwater River near Descanso	45.5	1905-27 1956-	USGS	2/16/27	13.2[b,h]	11,200	11/23/65 12/30/65	6.53 5.70	1,230 700
Jamul Creek near Jamul	70.3	1940-	USGS	12/ 1/47	6.42	4,000	11/23/65 12/30/65	3.60 2.62	680 51
Cottonwood Creek above Tecate Cr. near Dulzura	316	1936-	USGS	2/ 7/37	9.65	4,340[c]	11/23/65 12/29/65	3.90 2.38	238[c] 42[c]

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
South Coastal Area (Continued)									
Campo Creek near Campo	84	1936-	USGS	2/ 6/37	4.80	880	11/22/65 12/29/65	1.30 1.27	1.0[c] 0.8[c]
Tia Juana River near Dulzura	478	1936-	USGS	2/ 7/37	8.50	4,700[c]	11/23/65 12/29/65	3.67 2.52	250[c] 36[c]
Tia Juana River near Nestor	1,668	1914-15 1936-	USGS	2/ 7/37	8.20[b]	17,700	11/23/65 12/16/65	5.75 4.98	267[c] 145[c]
Central Valley Area									
Sacramento River at Delta	425[r]	1944-	USGS USBR	12/22/64	20.10	38,800	11/18/65	11.48	11,600
N. F. Pit River near Alturas	203[r]	1929-32 1957-	USGS	10/14/62	11.07	2,530	1/ 9/66	2.33	258
Pit River near Bieber	2,475	*1904-	USGS	3/19/07	16.7	33,800	3/11/66	6.43	2,440[c]
Pit River below Pit No. 4 Dam	4,647[r]	1922-	USGS	12/12/37	17.90	30,200	3/16/66	9.42	4,750[c]
Pit River near Montgomery Creek	4,945[r]	1944-	USGS	12/23/55	14.12[b]	37,100			
Squaw Creek above Shasta Lake	64.0[r]	1944-	USGS USBR	12/21/55	21.90	17,800	1/ 6/66	13.58	3,820
McCloud River above Shasta Lake	604[r]	1945-	USGS USBR	12/22/55	28.20	45,200	3/10/66	15.03	4,960
Sacramento River at Keswick	6,486[r]	1938-	USGS DWR	2/23/40	47.2[b]	186,000	1/17/66	16.95	17,300[c]
Clear Creek at French Gulch	115	1950-	USGS	12/22/64	13.70	7,600	11/15/65	8.23	2,390
Clear Creek near Igo	228	1940-	USGS	12/21/55	13.75	24,500	1/ 4/66	5.76	2,290[c]
Cow Creek near Millville	425	1949-	USGS	12/27/51	21.55	45,200	1/ 4/66	18.71	31,400
Cottonwood Creek near Cottonwood	922	1940-	USGS	12/22/64	19.64	56,500	1/ 5/66	13.88	14,700
Battle Creek below Coleman Fish Hatchery near Cottonwood	358	1961-	USGS	12/11/37	15.8[h,b]	35,000	2/ 6/66	5.97	1,590
Paynes Creek near Red Bluff	92.7	1949-	USGS	12/ 1/61	11.33	10,600	2/ 6/66	5.56	1,170
Sacramento River near Red Bluff	9,300	1892-	USGS	2/28/40	38.9	291,000	1/ 5/66	17.54	79,300[c]
Red Bank Creek near Red Bluff	93.5	1959-	DWR USBR	1/ 5/65	10.21	12,200	11/15/65	8.68	6,869[e]

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Central Valley Area (Continued)									
Antelope Creek near Red Bluff	123	1940-	USGS USCE	2/22/56	12.43	11,500	1/ 4/66	8.48	2,540
Elder Creek near Paskenta	92.9[r]	1948-	USGS	2/24/58	13.90	11,700	11/14/65	9.53	4,960
Elder Creek at Gerber	136	1949-	USGS USBR	1/ 5/65	14.90	14,100	1/ 4/66	10.97	6,220
Mill Creek near Los Molinos	131	*1909-	USGS	12/11/37	23.4[h]	23,000	1/ 4/66	6.62	2,760
Thomes Creek at Paskenta	194	1920-	USGS DWR	12/22/64	15.32	37,800	1/ 4/66	7.89	4,180
Deer Creek near Vina	208	*1911-	USGS DWR	12/10/37	19.2[h]	23,800	1/ 4/66	7.58	3,960
Sacramento River at Vina Bridge	-	1945-	DWR USBR	12/23/64	90.92	162,000[c,e]	1/ 5/66	84.08	95,710[c,e]
Sacramento River at Hamilton City	-	1945-	DWR USBR	12/11/37	150.7	350,000	1/ 5/66	142.61	87,070[c,e]
Big Chico Creek near Chico	72.5	1930-	USGS	1/ 5/65	15.36	9,580	1/ 4/66	8.25	2,850
Stony Creek near Fruto	599	1901-12 1960-	USGS	12/23/64	15.49	40,200[c]	1/ 4/66	11.50	12,800[c]
Stony Creek near Hamilton City	777	1940-	USGS	2/25/58	18.31	39,900[c]	2/ 5/66	9.81	5,740[c]
Sacramento River at Ord Ferry	-	*1921-	DWR	2/28/40	121.7	370,000	1/ 6/66	112.83	83,210[c,e]
Sacramento River at Butte City	-	*1921-	USGS DWR	2/ 7/42	96.87	170,000	1/ 6/66	89.33	72,700[c]
Moulton Weir Spill to Butte Basin	-	*1935-	DWR	2/20/58 2/26/58	83.66 83.66	36,000[d] 36,000[d]	1/ 6/66	78.02	2,045[d]
Colusa Weir Spill to Butte Basin	-	*1935-	DWR	2/ 8/42	70.40	86,000[d]	1/ 6/66	65.67	29,850[d]
Sacramento River at Colusa	-	1940-	USGS DWR	2/ 8/42	69.20	49,000[c]	1/ 6/66	63.97	40,100[c]
Colusa Basin Drain at Highway 20	-	1924-	DWR	2/21/58	51.93	25,400[e]	2/ 4/66	74.15	2,159
Butte Creek near Chico	147	1930-	USGS	12/22/64	14.12	21,200	1/ 4/66	5.28	3,150
Butte Slough to Sutter Bypass at Mawson Bridge	-	*1934-	DWR	3/ 1/40	68.9	210,000	1/ 7/66	54.27	11,480[e]

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Central Valley Area (Continued)									
Sutter Bypass at Long Bridge	-	1914-	DWR	3/ 1/40	57.7	210,000	1/ 7/66	54.27	-
Tisdale Weir Spill to Sutter Bypass	-	1940-	DWR	3/ 1/40	53.35	25,700[d]	1/ 7/66 2/ 5/66	48.26 -	- 11,180[d]
Sacramento River below Wilkins Slough	-	1938-	USGS	2/27/58	51.41	28,900[c]	1/ 7/66	47.84	27,100[c]
Sacramento River at Knights Landing	-	1940-	USGS DWR	12/ 8/42 12/ 3/60	41.83[k] 30.31	- 30,000[c]	1/ 6/66 1/ 7/66	35.40 33.92	24,500[c] 27,500[c]
Big Grizzly Creek near Portola	45.5	*1925-	USGS	2/ 1/63	8.03	4,080	5/10/66	4.77	648
Middle Fork Feather River near Clio	686	1925-	USGS	2/ 1/63	16.19	14,500	3/13/66	9.25	2,330
Middle Fork Feather River near Merrimac	1,062[r]	1951-	USGS	12/22/64	26.5[h]	86,200	3/13/66	10.08	4,760
South Fork Feather River at Enterprise	132	1911-	USGS	12/22/55	21.60	19,200	1/ 4/66	7.06	1,200
North Fork Feather River near Prattville	493	*1905-	USGS	3/19/07	16.2[b]	10,000	Regulated	No Peak	
Butte Creek below Almanor-Butte Creek Tunnel, near Prattville	68.8	1936-	USGS	12/23/64	5.87	3,830	6/12/66	3.86	1,670
Indian Creek near Crescent Mills	739	*1906-	USGS	3/19/07	20.2[b,m]	25,000	3/14/66	6.25	1,820
Spanish Creek above Blackhawk Creek, at Keddie	184	1933-	USGS	12/22/64	13.53	15,400	3/12/66	4.73	1,310
North Fork Feather River at Pulga	1,953	*1910-	USGS	12/22/64	35.80	73,000[c,g]	11/17/65	10.56	3,240[c]
West Branch Feather River near Paradise	113	1957-	USGS DWR	12/22/64	26.2	25,500	11/17/65	9.62	3,040
Feather River at Oroville	3,626[r]	1901-	USGS DWR	3/19/07	39.3[b,m]	230,000	1/ 5/66	6.50	15,300[c]
Feather River near Gridley	-	*1929-	DWR	12/23/55	102.25	-	1/ 5/66	31.60	14,600[c]
South Honcut Creek near Bangor	30.6[r]	1950-	USGS	12/26/64	19.25	17,000	1/ 4/66	6.98	1,280
Feather River at Yuba City	-	1944-	DWR	12/24/55	82.42	-	1/ 6/66	49.14	-
Middle Yuba River above Oregon Creek	162	1940-	USGS	1/31/63	18.55	31,600[c]	1/ 5/66	4.97	884[c]

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Central Valley Area (Continued)									
Oregon Creek near North San Juan	34.4	1911-	USGS	12/22/64	12.88	10,300	1/ 5/66	5.31	438
North Yuba River below Goodyears Bar	250	*1930-	USGS	2/ 1/63	23.8[h]	40,000	5/10/66	8.06	3,490
North Yuba River below Bullards Bar Dam	487	1940-	USGS	12/22/64	40.45	91,600[c]	4/ 8/66	9.81	4,420[c]
South Yuba River near Cisco	51.8	1942-	USGS	1/31/63	20.6[h]	18,400	5/10/66	6.08	1,260
South Yuba River at Jones Bar, near Grass Valley	310	1940-48 1959-	USGS	12/22/64	25.0	53,600[c]	1/ 5/66	7.63	1,360[c]
Yuba River at Englebright Dam	1,109[r]	1941-	USGS PG&E	12/22/64	546.0[n]	171,700[c,f]	4/13/66	529.52	6,685[c,f]
Deer Creek near Smartville	84.6	1935-	USGS	10/13/62	13.77	11,600[c]	12/28/65	7.57	2,620[c]
Yuba River near Marysville	1,340	*1940-	USGS	12/23/64	90.15	180,000[c]	1/ 5/66	64.17	7,300[c]
Bear River near Auburn	140	1940-	USGS	12/22/55	16.56[b]	19,700	1/ 6/66	7.25	2,060[c]
Bear River near Wheatland	292	1928-	USGS	12/22/55	19.30[b]	33,000	3/11/66	*3.75	870[c]
Feather River at Nicolaus	5,923[r]	1943-	USGS DWR	12/23/55	51.60	357,000[c]	1/ 6/66	32.76	22,900[c]
Fremont Weir (West End) Spill to Yolo Bypass	-	*1935-	DWR	12/23/55	39.72	293,800[d]	No Flow Over Weir		
Sacramento River at Verona	-	1929-	USGS DWR	3/ 1/40	41.20	79,200[c]	1/10/66	30.90	50,800[c]
Sacramento Weir Spill to Yolo Bypass, near Sacramento	-	*1939-	USGS DWR	3/26/28 12/23/55	31.83 33.01	118,000[d] -	No Flow Over Weir		
North Fork American River at North Fork Dam	343	1941-	USGS	12/23/64	11.87	65,400[c]	4/ 2/66	2.68	2,270[c]
Rubicon River near Foresthill	311	1958-	USGS	12/23/64	74[p,h]	-	11/18/65	9.26	1,580
Middle Fork American River near Foresthill	534	1958-	USGS	12/23/64	69[p,h]	-	11/18/65	8.11	1,980
Middle Fork American River near Auburn	613	1911-	USGS	12/23/64	60.4[h]	250,000[p]	11/18/65	9.23	2,240
South Fork American River near Kyburz	193	1907, 1922-	USGS PG&E	12/23/64	10.92	17,400[c,g]	5/10/66	5.15	1,520[c]

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Central Valley Area (Continued)									
South Fork American River near Camino	501	1922-	USGS PG&E	12/23/55	32.6[h]	49,800[c]	5/13/66	8.60	3,050[c]
South Fork American River near Lotus	673	1951-	USGS	12/23/55	21.37	71,800[c]	12/29/65	7.68	3,080[c]
American River at Fair Oaks	1,888[r]	1904-	USGS	11/21/50	31.85[b]	180,000	3/18/66	3.77	4,110[c]
Sacramento River at Sacramento	23,530	*1879-	USGS DWR USWB	11/21/50	30.14[b]	104,000[c]	1/10/66	16.81	53,000[c]
Sacramento River at Walnut Grove	-	1929-	DWR	11/21/50	13.0[b]	-	1/ 9/66	6.50	-
Adobe Creek near Kelseyville	6.39	1954-	USGS	12/22/64	9.11	1,500	1/ 4/66	8.31	1,140
Kelsey Creek near Kelseyville	37.2	1946-	USGS	12/21/55	12.80	8,800	1/ 4/66	10.84	4,490
Cache Creek near Lower Lake	528	1944-	USGS	2/24/58	9.40	8,000[c]	3/17/66	801	4,920[c]
North Fork Cache Creek near Lower Lake	198	1930-	USGS	12/11/37	13.98[h]	20,300	1/ 4/66	10.53	12,900
Cache Creek above Rumsey	-	1959-	DWR	1/ 5/65	21.4	59,000[c]	1/ 4/66	15.66	23,600[c]
Cache Creek near Capay	1,042[r]	1942-	USGS	2/24/58	20.90	51,600[c]	1/ 5/66	14.57	17,700[c]
Cache Creek at Yolo	1,138[r]	1903-	USGS	2/25/58	33.11[b]	41,400[c,g]	1/ 5/66	25.44	18,400[c]
Yolo Bypass near Woodland	-	1939-	USGS DWR	2/ 8/42	32.00	272,000		No Flow	
Dry Creek near Middletown	8.41	1959-	USGS	2/ 8/60	9.90	3,470	1/ 4/66	8.63	2,040
Putah Creek near Winters	5.74[r]	1930-	USGS DWR	2/27/40	30.5	81,000	7/11/65	8.13	759[c]
Yolo Bypass near Lisbon	-	1914-	DWR	12/25/64	24.68	350,000[e]	1/ 9/66	11.7	
Sacramento River at Rio Vista	-	1906-	USCE DWR	12/25/55	10.2[b]	-	2/ 4/66	7.93	-
North Fork Cosumnes River near El Dorado	205	1911-41 1948-	USGS	12/23/55	14.8	15,800[c]	12/29/65	5.07	765[c]
Middle Fork Cosumnes River near Somerset	107	1957-	USGS	2/ 1/63	16.20	11,800	4/ 1/66	6.22	412

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Central Valley Area (Continued)									
South Fork Cosumnes River near River Pines	64.3	1957-	USGS	2/ 1/63	10.90	5,540	12/29/65	3.20	464
Cosumnes River at Michigan Bar	536[r]	1907-	USGS DWR	12/23/55	14.59	42,000	12/29/65	5.82	2,880
Cosumnes River at McConnell	724	1941-	USGS USBR DWR	12/23/55	46.26	54,000	12/31/65 2/ 6/66	37.14 37.13	2,910 3,220
Dry Creek near Galt	329	1926-33 1944-	USGS USBR DWR	4/ 3/58	15.28	24,000	1/30/66	10.86	1,510
Cole Creek near Salt Springs Dam	20.4	1927-42 1943-	USGS	12/23/64	10.21	6,140	10/18/65	3.36	301
South Fork Mokelumne River near West Point	75.1[r]	1933-	USGS	12/23/55	14.8[b,h]	6,920	11/24/65	4.54	372
Mokelumne River near Mokelumne Hill	544[r]	*1901-	USGS	12/ 3/50	18.5	33,700[c]	11/18/65	4.65	1,620[c]
Mokelumne River at Woodbridge	661[r]	1924-	USGS DWR	11/22/50	29.58	27,000[c]	11/12/66	16.16	2,510[c]
Mokelumne River near Thornton (Benson's Ferry)	2,045	1959-	DWR	12/24/55	18.00[b]	-	2/ 7/66	6.09	-
Bear Creek near Lockeford	47.6[r]	1930-	USGS DWR	4/ 3/58	15.13	2,930	1/30/66	9.50	680
South Fork Calaveras River near San Andreas	118	1950-	USGS	12/23/55	10.29	17,600	12/29/65	5.47	2,300
Calaveras River at Jenny Lind	393[r]	1907-	USGS DWR	1/31/11	21.0[m]	50,000	1/ 6/66	6.26	2,120[c]
Cosgrove Creek at Valley Springs	21.1[r]	1929-	USGS	12/23/55	8.96	3,240	1/30/66	4.63	442
Calaveras River at Bellota	-	1958-	DWR	4/ 2/58	19.3	1,570[c]	1/ 7/66	7.04	236[c,e]
Mormon Slough at Bellota	-	1948-	DWR	4/ 2/58	20.65	15,400[c]	1/ 7/66	7.45	1,690[c]
Calaveras River near Stockton	-	1958-	DWR	4/ 4/58	9.20	632[c]	1/ 7/66	6.25	195[c,e]
Stockton Diverting Canal at Stockton	-	1944-	DWR	4/ 4/58[e]	17.18[e]	11,400[e]	1/ 7/66	8.92[e]	1,520[e]
Duck Creek near Stockton	-	1950-	DWR	12/24/55	5.75[e]	400	2/ 6/66	3.61	145[e]

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Central Valley Area (Continued)									
South Fork Stanislaus River near Long Barn	66.9[r]	1937-	USGS	11/21/50	9.3	4,900[c]	Regulated		
Stanislaus River below Melones Powerhouse, near Sonora	905[r]	1931-	USGS	12/23/55	29.0[h]	62,800[c]	10/20/65	6.83	1,710[c]
Stanislaus River at Orange Blossom Bridge	-	1940-	DWR	11/21/50	30.05	52,000[c]	2/ 6/66	6.04	2,620[c]
Stanislaus River at Ripon	1,075	1940-	USGS DWR	12/24/55	63.25	62,500[c]	12/30/65	46.17	2,280[c]
South Fork Tuolumne River near Oakland Recreation Camp	87.0[r]	1923-	USGS	12/23/55	10.9[h]	11,900	11/24/65	5.21	1,060
Middle Fork Tuolumne River at Oakland Recreation Camp	73.5[r]	1916-	USGS	12/23/55	11.05[h]	4,920	11/23/65	5.13	629
Tuolumne River at Modesto	1,884	*1878-	USGS DWR	12/ 9/50	69.19	57,000[c]	12/31/65	45.77	3,910[c]
Orestimba Creek near Newman	134[r]	1932-	USGS DWR	4/ 2/58	6.57[b]	10,200	12/30/65	5.51	124
Merced River at Pohono Bridge, near Yosemite	321	1916-	USGS	12/23/55	21.52[h]	23,400	5/ 8/66	7.00	2,700
South Fork Merced River near El Portal	241[r]	1950-	USGS	12/23/55	18.70	46,500	11/24/65	9.08	2,530
Merced River at Bagby	911[r]	1922-	USGS	12/23/55	26.80	92,500	11/24/65	5.99	6,900
Merced River near Stevinson	1,273[r]	1940-	USGS USBR DWR	12/ 5/50	73.79	13,600[c]	12/ 4/65	67.60	4,780[c]
Chowchilla River at Buchanan Dam Site, near Raymond	235[r]	1921-23 1930-	USGS DWR	12/23/55	16.50	30,000	12/31/65	6.47	1,540
Fresno River near Knowles	133[r]	1911-13 1915-	USGS	12/23/55	11.52	13,300	12/30/65	2.94	662
Fresno River near Daulton	258[r]	1941-	USGS USBR	12/23/55	12.64	17,500	12/30/65	4.22	882
Willow Creek at Mouth near Auberry	130	1952-	USGS	12/23/55	28.5[h]	15,700[c,r]	11/24/65	10.22	1,380[c]
San Joaquin River below Kerchoff Powerhouse, near Prather	1,480	*1910-	USGS	12/23/55	51.0[h]	92,200[c]	11/24/65	15.60	3,890[c]

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Central Valley Area (Continued)									
San Joaquin River below Friant	1,675	*1907-	USGS	12/11/37	23.80[b]	77,200[c]	7/13/66	2.60	161[c]
San Joaquin River near Mendota	4,310	1939-	USBR	6/ 1/52	-	8,840[c]	8/ 1/66	4.72	468[c]
Eastside Bypass near El Nido	-	1964-	DWR	-	-	-	1/ 2/66	11.55	1,560
San Joaquin River at Fremont Ford Bridge	7,619[r]	1937-	USGS USBR DWR	4/ 6/58	74.91	5,910[c]	1/ 3/66	62.01	2,210[c]
San Joaquin River near Newman	9,524[r]	1912-	USGS DWR	3/ 7/38	65.81	33,000[c,g]	1/ 2/66	58.94	6,080[c]
San Joaquin River near Vernalis	13,540[r]	*1922-	USGS	12/ 9/50	32.81	79,000[c]	12/ 7/65	21.23	9,730[c]
Los Gatos Creek above Nunez Canyon near Coalinga	95.8[r]	1949-	USGS	4/ 3/58 2/ 9/62	6.51 7.25	2,560 2,560	11/23/65	4.95	380
Kings River below North Fork	1,342	1951-	USGS	12/23/55	23.08	85,200	5/ 7/66	8.00	6,110
Kaweah River at Three Rivers	418	1958-	USGS DWR	2/ 1/63	13.68	30,900	11/23/65	6.28	1,680
Tule River near Springville	225	1957-	USGS	1/31/63	10.80	10,100	12/29/65	4.92	689
Tule River below Success Dam	393	1953-	USGS	12/23/55	21.65[b]	27,000	10/14/65	5.86	447[c]
Kern River at Kernville	1,009[r]	1905-12 1953-	USGS	12/23/55	16.8[h]	29,400	5/ 7/66	6.82	1,760
Northern Lahontan Area									
Willow Creek near Susanville	92.5	1950-	USGS	2/ 1/63	5.59	816	3/10/66	3.38	120
Susan River at Susanville	192	*1900-	USGS	12/22/64	7.30	5,100	3/13/66	3.54	318
Little Truckee River above Boca Reservoir near Boca	146	1903-10 1939-	USGS	2/ 1/63	9.00	13,300	5/10/66	2.23	606
Truckee River at Farad	932	1899-	USGS	11/21/50	14.5[h]	17,500	12/ 6/65	4.74	2,000[c]
East Fork Carson River below Markleeville Creek near Markleeville	276[r]	1960-	USGS	1/31/63	8.21	15,100	5/ 5/66	2.16	1,230

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Discha. in cfs	Date	Stage in ft.	Discha. in cfs
Northern Lahontan Area (Continued)									
West Fork Carson River at Woodfords	65.6	*1900-	USGS	2/1/63	9.00	4,890	4/ 1/66	3.10	340
West Walker River below Little Walker River near Coleville	180[r]	1938-	USGS	11/20/50	8.10	6,220	5/21/66	3.67	1,020
East Walker River near Bridgeport	359[r]	1921-	USGS	6/19/63	4.64	1,390	5/25/66	1.78	285[c]
Southern Lahontan Area									
Deep Creek near Hesperia	137	1904-22 1929-	USGS	3/ 2/38	-	46,600[c]	11/22/65 12/29/65	12.34 11.99	21,700[c] 20,800[c]
West Fork Majave River near Hesperia	74.8	1904-22 1929-	USGS	3/ 2/38	-	26,100	11/22/65 12/29/65	11.20 14.20	8,420 21,200
Mojave River at Lower Narrows near Victorville	530	1899-06 1930-	USGS	3/ 2/38	18.7	70,600[c]	11/23/65 12/30/65	10.57 12.66	17,100[c] 32,800[c]
Mojave River at Baretow	-	1930-	USGS	3/ 3/38	8.60	64,300[c]	11/23/65 12/30/65	4.56 5.97	4,600[c] 8,970[c]
Mojave River at Afton	-	1929-32 1952-	USGS	2/10/32	4.70[b]	3,550	11/23/65 12/31/65	3.43 7.92	7.9 4,150**
Big Rock Creek near Valyermo	23.0	1923-65	USGS	3/ 2/38	-	8,300	11/22/65 12/29/65	7.10 6.70	1,270 2,100
Little Rock Creek near Little Rock	49.0	*1930-	USGS	3/ 2/38	-	17,000[e]	11/22/65 12/29/65	* *	2,900 5,730
Pine Tree Creek near Mojave	33.5	1958-	USGS	8/23/61	-	30,000[e]	11/24/65 12/29/65	3.83 4.57	* *
Colorado Desert Area									
Fortynine Palms Creek near Twentynine Palms	8.55	1962-	USGS	8/ 7/63	4.55[j]	1,240	11/22/65 12/22/65	- 1.30	0 17
Chariot Creek near Julian	7.94	1961-	USGS	4/ 2/64	5/8;	5.5	11/22/65 12/29/65	8.02 8.20	44 220**
San Felipe Creek near Julian	89.3	1958	USGS	9/13/61 10/18/64	1.85 1.85	16 16	11/23/65 12/30/65	1.52 2.15	3.0 45
Coyote Creek near Borrego Springs	144	1950-	USGS	7/28/51	14.14[h]	3,800	11/22/65 12/30/65	12.50 9.43	573 30
Borrego Palm Creek near Borrego Springs	21.7	1950-	USGS	8/23/55	9.9[h]	2,000	11/23/65 12/30/65	2.43 2.50	7.9 9.1

Table 11 (Continued)

Stream and Station	Drainage Area in Sq. Mi.	Period of Record	Source of Record (a)	Previous Maximum of Record			1965-66 Water Year		
				Date	Stage in ft.	Dischg. in cfs	Date	Stage in ft.	Dischg. in cfs
Colorado Desert Area (Continued)									
San Felipe Creek near Westmoreland	1,693	1960-	USGS	10/19/63	11.85[h]	7,230	11/24/65 12/16/65	5.36 9.00	19 3,600
Snow Creek near White Water	11.0	1921-	USGS	12/ 2/61	3.87	285	11/22/65 12/29/65	22.1 -	4,200** -
Tahquitz Creek near Palm Springs	16.7	1947-	USGS	8/31/54	8.45	1,570	11/22/65 12/29/65	10.34 3.92	2,900** 169
Palm Canyon Creek near Palm Springs	94.0	1930-42 1947-	USGS	2/ 6/37	5.06[b]	3,850	11/22/65 12/16/65	5.61 3.28	1,520 190
Andreas Creek near Palm Springs	8.78	1948-	USGS	8/31/54	7.11	1,960	11/22/65 12/29/65	3.74 2.48	1,000[e] 56
Deep Creek near Palm Desert	30.6	1962-	USGS	7/26/64	2.66	52	11/23/65 12/29/65	5.15 3.65	1,300** 168
Pipes Creek near Yucca Valley	15.1	1958-	USGS				11/23/65 12/29/65	1.85 3.52	10[e] 350**
Cushenbury Creek near Lucerne Valley	6.36	1957-	USGS	3/11/58	1.90	35	11/23/65 12/29/65	2.35 -	250** 0

LEGEND

(a) USWB - United States Weather Bureau
USCE - United States Corps of Engineers
USGS - United States Geological Survey
USBR - United States Bureau of Reclamation
DWR - Department of Water Resources
PG&E - Pacific Gas and Electric Company

b - Site and/or datum then in use
c - Affected by storage and/or diversion
d - Discharge over weir
e - Estimated
f - Includes flow through powerhouse
g - Includes flow bypassing station
h - From flood marks
j - Crest stage gage
k - Discharge not determined; affected by backwater
m - Maximum observed
n - From DWR telemetering log
p - Due to failure of partially completed Hell-Hole Dam
r - Revised
* - Incomplete record
** - Maximum of record

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